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ABSTRACT

A project was conducted to serve directly individuals enrolled in adult education programs whose life potentials have been severely limited by specific learning disabilities. The target group was students whose academic achievement grade levels fell within a 0-4 (and secondarily 4-8) range. Direct service components were diagnostic testing and evaluation, with written reports and comprehensive interpretive conferences and individualized prescriptive remedial programs delivered on a one-to-one basis in a clinical setting; and informal personal counseling. Additional services included consulting with adult education teachers on specific individuals, developing appropriate materials and programs for adult learning-disabled students, and broadening the community's awareness of adults with learning disabilities. All services were provided by experienced learning disabilities teachers. This report offers background on adults with learning disabilities from general needs to theoretical perspectives, a brief review of selected literature, a clinically based service model of educational therapy, a critique of a recent diagnostic battery suitable for adults with learning problems, and detailed accounts of this project's objectives. Abbreviated case studies, progress reports, and a list of remedial materials are also included in appendixes. Factors predictive of individual success in educational therapy are discussed. Recommendations for future programs for the learning-disabled adult are given. (Author/KC)

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ADULT EDUCATION SPECIAL DEMONSTRATION PROJECT

SPECIAL NEEDS GROUP - HANDICAPPED: DEVELOPMENT OF APPROPRIATE SERVICES FOR THE LEARNING DISABLED

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ABSTRACT

The goal of the project was to directly serve individuals enrolled in adult education programs whose life potentials have been severely limited by specific learning disabilities. The target group was students whose academic achievement grade levels fell within a 0-4 (and secondarily 4-8) range. Direct service components were diagnostic testing and evaluation, with written reports and comprehensive interpretive conferences, individualized prescriptive remedial programs delivered on a 1 to 1 basis in a clinical setting; and informal personal counselling. Additional services included consulting with adult education teachers on specific individuals, developing appropriate materials and programs for adult LD learners, and broadening the community's awareness of adults with learning disabilities. All services were provided by experienced learning disabilities teachers. This report offers background on adults with learning disabilities from general needs to theoretical perspectives, a brief review of selected literature, a clinically based service model of educational therapy and a critique of a recent diagnostic battery suitable for adults with learning problems, in addition to detailed accounts of this project's objectives. Abbreviated case studies, progress reports and a list of remedial materials are also included in appendices. Factors predictive of individual success in educational therapy are discussed. Recommendations for future programs for the learning disabled adult are given.

This report should prove helpful to adult education teachers and program developers in any area of education or human services (Vocational Rehabilitation, Employment/job training, mental health) who deal with the needs of the adult learning disabled.

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Appreciation for cooperation with this project is extended to all of the ABE people who were involved, particularly to the staff at Jefferson County Adult Education - the teachers, counselor Rich Pavese and Director Dr. Sig Johnson. Special credits go to Barbara Grochowski for her unofficial, unpaid work as liaison between this AE center and the clinic.

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INTRODUCTION

The special federal project for adults with learning disabilities awarded to the CSPS Foundation in Wheat Ridge, Colorado, through the Colorado State Department of Education, Division of Adult Education, directly served 25 individuals who were experiencing major learning problems in their local Adult Basic Education programs in the Denver Metropolitan area. The two major objective components of the project were diagnostic evaluation and individual educational therapy remediation programs.

This report delineates many aspects of the problems and educational treatment of adults with learning disabilities. Considerable time and effort were devoted to the preparation of the report. The goal of this body of information is to provide Adult Basic Education with a major resource document on adult learning problems. While portions of the report are carefully documented by appropriate literature, much of the material is based on the author's professional work with learning disabled adults in a clinical setting.

Overview and Organization

Chapter I outlines the services provided by this grant. Twenty-one individuals received a full diagnostic evaluation using the Woodcock-Johnson Psycho-Educational Battery. Eighteen persons from 6 ABE centers were accepted into individual remediation programs based on need and favorable prognosis. These programs ranged from 12-65 contact hours over a 2-8 month period. Each individual's program was designed and delivered on the basis of a clinical model of educational therapy.

Project development and component objectives are also described in Chapter I. Tables list data on the students and their programs. Outreach activities and other projects dealing with learning disabled ABE students in Colorado are included in this chapter of the report.

Chapter II presents information on the situation of the learning disabled adult in this country. Relevant laws and organizational efforts are cited. A case is developed for the lifelong nature of learning disability. The issue of LD as a handicap is explored. Psychological correlates of LD in adults are examined, integrating the author's experiential philosophy with data on students in this project. Several major patterns of psychological adjustment are discussed. A section of Chapter II deals with employment patterns of ALD. Job difficulties and limitations based on the LD are described.

Chapter III looks at the learning disabled population enrolled in Adult Basic Education. Various estimates of prevalence are cited. An attempt was made to gather background by sampling opinions of authorities in adult education dealing with learning disabled students. Styles of teaching observed among adult educators and situational factors of ABE settings are examined in relationship to the needs of problem learners. Tutoring and educational therapy are differentiated. Measurement tools to identify LD learners in ABE programs (The London Procedure and the Slingerland Screening Tests) are evaluated. Cautions in the use of these tools are set forth. Projects carried out in several parts of the country by ABE to develop teachers' skills with LD learners are selectively reviewed. Some insights into the future focusing on exceptional learners within ABE are offered.

The LD adolescent as currently being served in public schools is the focus of Chapter IV. The issues explored within this topic are viewed as having major impact on future ABE programs. A review of literature provides the basis for discussion of LD adolescents. The short-comings of present secondary level school programs and some suggestions are presented.

Chapter V addresses the issue of prevalence of LD in the adult population. An attempt is made to reconcile legal and professional estimates of 2-5% incidence with the high percentages (60-75%) commonly cited by adult educators. Factors considered in this reconciliation were characteristics of ABE students, identification of exceptional learners and the severity of the problem. Two classification systems for ALD are offered: One is based on educational severity; the other categorization is based on primary handicapping conditions. A descriptive figure of primary and secondary learning problems was devised for the 25 individuals participating in this project.

Chapter VI could be considered a summary of the development of the field of learning disabilities written for adult educators. An historical perspective is given, followed by a presentation of various etiological and treatment approaches. The applicability of these approaches with adults is discussed. Neurological aspects of learning disabilities and medical terminology are dealt with in this section, and are examined from two backgrounds - acquired language dysfunctions in adults and developmental problems of children.

Traditional and recent educational approaches to learning disabilities are evaluated. Current literature in the field is cited. Irrelevancy of perceptual deficit hypotheses in working with ALD is argued. More recent, productive ideas about the relationship of cognition and linguistics to learning disabilities are briefly summarized.

A linguistic (language-based) perspective on adult learning problems is offered in Chapter VII. The viewpoint is taken that pervasive, serious learning disabilities in adults are language disorders. A speech communication summary is given to demonstrate the nature and impact of language/communication disorders on the adult's life. Empirical evidence in the form of survey findings is offered as support for this hypothesis.

Chapter VIII is devoted to diagnostic evaluation of ALD through psycho-educational testing. The Woodcock-Johnson Psycho-Educational Battery was the major tool used in this project. The use of this test for the diagnosis of LD in adults is evaluated based on patterns found with ABE project students. Several tables present data on the 15 students with specific learning disability. Cognitive processes, academic aptitudes and achievement scores as measured by the test battery are examined. Discrepancies between aptitude and achievement scores in reading were found to be very great for the LD students.

The heart of this project's services - direct remedial work with students - is described in Chapter IX. The rationale and goals of educational therapy for adults are set forth as critical assumptions about ALD. Educational therapy consists of remediation/compensation of deficit areas, academic instruction and personal counselling in the learning situation. Within this type of model, far greater emphasis is placed on developing effective learning strategies than on academic content.

A theoretical and practical model of adult learning disabilities based on a developmental response levels approach (Kass) is presented and explained. A number of basic principles for adult remediation are listed. These principles are organized by four topics: therapeutic qualities, student involvement, program content, and program plan and delivery.

The philosophy is held by the report author that specific materials are less important than development of strategies for learning. However, several major published programs have proven highly useful and can readily be adapted to adult learners' needs. The use of selected materials is discussed in Chapter IX.

Progress of the students receiving remedial services through the project is analyzed in Chapter X. Interpretations of progress are given from three perspectives: academic gains, changes in processing and development in personal areas. Data for these areas is presented in tabular form and then discussed. Progress and growth charts for 15 students and final reports for 19 students are included in Appendix D.

Chapter XI delineates the budgetary aspects of the project.

Conclusions based on this project are given in Chapter XII. Recommendations for services for adults with learning disabilities enrolled in ABE are also suggested here.

References and a glossary of terms accompany this report.

Several appendices are provided. These appendices include referral and communication regarding this project, a sample student evaluation report, final progress charts and reports on individual students, and a list of useful remedial materials and resources.

Dates

The official funding period for CDE Project #80-5 was July 1, 1979 - June 30, 1980. Actual work on the project, from preliminary needs assessment to final reporting and student follow-up encompassed a period from May, 1979 through August, 1980. Direct student services were carried out from October, 1979 through June, 1980 with the preponderance of remedial services delivered during January - June, 1980.

Background and Project Development

The problems faced by adults with learning disabilities (ALDs) had been recognized by adult educators in Colorado for a number of years. During FY-1978-1979, Kathleen Vonderhaar, Director of the Colorado Adult Education Resource Center brought to awareness some of the many needs of ALDs in Adult Basic Education (ABE) Programs throughout the state through several workshops and the distribution of a series of films on adult learning problems.[1] Ms. Vonderhaar's efforts succeeded in developing a growing concern among state officials, local administrators and teachers about how to deal with these exceptional learners. It is estimated that 60% - 75% of low level (0-8) ABE students have learning disabilities. Many of these students quit, or are only marginally involved in educational programs because no effective remedial programs exist to meet their special needs.

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[1] Laura P. Weisel, The London Procedure, London, Ohio, 1977, Filmed by ABE/LD-TV, Dr. Michael S. Parer; Adult Education Special Project #92 for the Indiana Dept. of Pub. Instn., Bloomington, Indiana, 1978.

The spring of 1979, Ms. Vonderhaar conducted a search in the Denver Metro area for services available to ALDs. One of the few existing facilities located was Academic Development Services, a private clinic in Wheat Ridge. The assistance of the director of that facility, Ms. Paula Pattschull, was sought in the development of a teacher training program.

An additional factor having major influence on the development of this direct service project was the close cooperation of a large Metro area Adult Education Program in Jefferson County. The director of an alternative Adult High School Program (Adult Performance Level, Life Skills) at the Jefferson County Center, Ms. Barbara Grochowski, was also a learning disabilities teacher at Academic Development Services. Ms. Grochowski and two other adult educators, Mr. Rich Pavese (Counselor) and Mr. Joe Becker (ABE Director), worked informally

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Ibid., from Manual and Interpretations Guide, p.34; Kathleen Vonderhaar, Director, Colorado Adult Ed. Resource Center. Dale Jordan, Ph.D., Jordan-Adams Learning Center, Oklahoma City, Oklahoma.

with Ms. Pattschull to help identify specific needs for LD services among the Jefferson County ABE student population. This group also designed preliminary procedures for screening and referring students for special LD services.

The original proposal (requesting funding at $20,000) conceptualized a learning disabilities center located in central Denver with a full-time LD specialist that would serve students from any ABE center in the Metro area. Consulting and ABE staff development were major components in this plan. The culmination of the project was to be the development of a major resource book to assist adult education teachers in their work with students with learning problems.

Half of the original proposal was funded ($10,000). This change necessitated curtailment of the scope of services that could be offered. The role of LD consultant to adult education teachers was drastically reduced and the resource book had to be eliminated. The development of a centrally-located LD center was not feasible; thus, fewer ABE centers could be served. Major changes in staff were negotiated. However, after initial adjustments and monetary delays were resolved, the project gained identity as a comprehensive model for ALD services in the Denver community.

Location of Services and Clinic Affiliations

The U.S. Office of Education monies for the project were awarded to the CSPS Foundation, a public non-profit organization that deals primarily with college selection and career planning. While three of the Foundation's purposes deal directly with the content of this project,[3] Academic Development Services is the organization through which learning disabilities services have been offered on private and state agency authorization bases since 1971. The clinic center in Wheat Ridge houses three groups: CSPS Foundation, Academic Development Services and Behavioral Science Associates (a group of clinical psychologists). The formal affiliation of these groups is through Dr. Laurence C. Smith, owner of the latter two services and the President of the Board of Directors of CSPS Foundation. All delineable local in-kind donations for this project came from Academic Development Services.

Academic Development Services (ADS) is a small, private educational service that offers diagnostic evaluation and educational therapy to individuals of all ages with learning disabilities. The Director of ADS, Ms. Paula Pattschull, M.A., has worked with this group since 1976. The basic philosophy of ADS is to provide high quality, professional services at reasonable fees in a learning environment in which students can have confidence and feel comfortable. With the exception of summer small-group sessions for children, all educational therapy is done on a one-to-one basis. For the past 3-4 years ADS has specialized in programs for adults, developing testing procedures, remedial materials, etc. that are appropriate for this older population. Many of the adults served at the clinic are fully or partially funded by Vocational Rehabilitation. It is out of this background that the expertise for the ABE project evolved.

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[3] Articles of Incorporation of College Selection and Planning Service Foundation; Sec. 1, Article Four, Purposes #s 6, 10 and 11.

When the original proposal funds were halved, the establishment of a centrally-located LD center became impossible. ADS then agreed to donate a sizeable portion of its facilities to the project. With the exception of 3 students who were served at their local ABE center in downtown Denver by project staff, all educational therapy was conducted at the ADS/CSPS clinic in Wheat Ridge. This did not create transportation problems for any of the students, which was partially due to referral sources (as explained in chapter 3).

Screening procedures were carried out by ABE teachers or counselors at their local adult education centers in all cases.

Three-fourths of the diagnostic testing was conducted at ABE centers with the project staff traveling out to these centers; one-fourth of this work was done at the clinic. In most cases the interpretive conferences explaining the test results to the student, his/her family and ABE teachers were scheduled at the AE centers. In a few cases, the students chose to have their conferences at the clinic.

Staff

The unity and dedication of the professional and support staff contributed largely to the project's success. No full-time staff person could be retained due to the amount of the funding. The professional staff persons are listed below with their job responsibilities on this project, other job positions and the dates they worked on this project. The three responsibilities referred to in the proposal objectives are Diagnostician, Educational Therapist and Consultant (to ABE teachers).

Project Director, Diagnostician, Educational Therapist and Consultant

Paula Pattschull, M.A. May, 1979 - August 1980
Director and Educational Therapist,
Academic Development Services;
Learning Disabilities Consultant,
Teacher Training Project for
Colorado Adult Education Resource Center

Diagnostician

Diane Tucker, M.A. October, 1979-March, 1980
L.D. Diagnostician,
Jefferson County Public Schools

Educational Therapist, Consultant, Liaison

Barbara Groschowski, B.A. May, 1979-June, 1980
Life Skills Specialist,
Jefferson County Adult Education;
Educational Therapist,
Academic Development Services

Diagnostician, Educational Therapist, Consultant

Kathy LeVeck, M.Ed. December, 1979-June, 1980
Reading Specialist,
Academic Development Services

Educational Therapist

Dian Bates, B.A. May-July, 1980
Technical Assistant for
Vocational ABE Instructors
Denver Employment and Training Administration

CHAPTER I

PROJECT SERVICES AND PARAMETERS

Activities described here are organized in approximate chronological order as depicted in Table 1, "Summary of Project Activities." The seven component objectives of the grant are summarized in this section of the report; major direct service components receive full treatment in later chapters. Data on the students served by the project is presented throughout the report as appropriate to the topics discussed.

Project and Staff Development

Planning and program development, with major revisions during the summer of 1979, were discussed in the introduction. Staff development was generally carried out by the project director, with assistance of the liaison person and other local A.E. staff people. The objective dealing with staff development is as follows:

> Within 1-2 months of project start the D/ET/C will become familiar with: materials available to the project, evaluation and therapy procedures specific

TABLE 1

SUMMARY OF PROJECT ACTIVITIES

		ACTIVITY	PEOPLE INVOLVED
1979	May June July Aug.	Planning and Program Development	Project Director State and Local ABE Officials Jefferson County group (see p.)
	Sept. Oct.	Screening and Referral	Liaison and Counselor (Jefferson County ABE) ABE Teachers Project Director
	Nov. Dec. Jan. Feb. Mar. Apr.	LD Evaluation Background Data Collection Diagnostic Testing	Students Diagnosticians
	May	Interpretive conference (Staffing)	Students and their Families ABE Teachers and Staff Diagnostician/Consultants
1980	June July	Educational Therapy Remediation and Counselling	Students Educational Therapists (Informal Consulting with ABE Teachers
	Aug.	Final Reporting	Project Director and Staff
	Sept. Oct.	Student Follow-up and Reintegration into ABE Programs	Students Liaison ABE Teachers Project Director and Consultants

to adults, local A.E. programs in the Denver area, referral procedures for A.E. - potential LD students to the project center for testing and evaluation.

Orientation Training Sites: Local A.E. program, A.E. Resource Center, Project Center.

Due to staff changes (necessitated by the move of the primary diagnostician to another part of the country), staff development was an ongoing process throughout the project. Actual training included frequent communications, a workshop on a new remedial program, formal and informal staffings and supervision provided by the project director.

The acronym "D/ET/C" refers to the three roles of the LD specialist - diagnostician, educational therapist and consultant (to ABE teachers). The duties of each staff person consisted of one or more of these responsibilities. Diagnostic work denotes administration, scoring and interpretation of the Woodcock-Johnson Psycho-Educational Battery with a full written report for each student. The role of educational therapist is generally broad and includes direct remedial work with learning deficits, academic skills development, some basic life skills instruction, varying degrees of advocacy, and a sizeable amount of personal counseling usually related to the LD condition and its effects on an individual's life. The consultant function existed only in relationship to particular students and was carried out initially as part of interpretive student conferences. The extent of ongoing communications between LD specialists and A.E. teachers varied greatly depending on the situation. In some cases the D/ET/C designed and monitored students' total educational programs; in other cases contacts were minimal. Generally the amount of consulting depended on the degree of assistance A.E. teachers requested from the D/ET/C.

Screening and Referral

Students from six local ABE centers received services through this grant. Seventy percent of the students served were referred from the Jefferson County Center. Reasons for this included the following factors associated with this particular center:

1. Staff and administrative support and encouragement in the development of the project
2. Awareness of learning disabilities and teacher preparation
3. Delineation of student needs and requests for assistance with specific individuals
4. The existence of a competent liaison person who became involved in many aspects of cooperation between the A.E. center and the project
5. Geographic feasibility for project staff

The existence of the grant services was made known to ABE directors through personal contact and information in a newsletter in the fall. When the project was fully staffed after the first of the year, a letter explaining the project and referral procedures was sent to each ABE director in the Denver Metro Area (see Appendix B).

The instrument used to screen students for the project was a simple checklist designed by the project director, "Indicators of Learning Disabilities in Adults." (Appendix B). Thirty statements requiring a "yes - no" response from the student were given by A.E. teachers or counselors. The counselor at the Jefferson County Center who referred the majority of the students to the project received informal training with the checklist. The results of the checklist along with A.E. and public school records were then discussed with the project director to determine if a referral was appropriate. While this checklist (which is currently undergoing major revisions) is vague in several areas, it proved highly useful as a quick screening device for the project. Of the 25 individuals referred to the project, all were diagnosed as having learning disabilities, with specific learning disability as the primary handicapping condition in 16 cases. (See chapter 6).

An additional screening tool that was used initially was the Peabody Picture Vocabulary Test.[1] (PPVT). This rapidly administered test is designed to provide an estimate of a person's verbal intelligence through measuring receptive language vocabulary. The student is presented with a word and asked to select the correct picture from four choices. The use of this test in screening for this project was to help determine if students' learning problems were more likely due to learning disabilities or due to limited intellectual potential. The rationale was that if a student was below a normal range in verbal capacity, his prognosis for success in language areas would be limited, and thus he should not be referred.

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[1] L. Dunn, Peabody-Picture Vocabulary Test, Circle Pines, Minnesota: American Guidance Service, Inc., 1959.

The results of the PPVT testing did not prove useful to this project; in fact, scores were often found to conflict with other evidence (teacher judgement, major diagnostic testing). Possible factors in the lack of success with this screening instrument for adults could be: 1) Limited reading skills and low educational level tend to seriously inhibit vocabulary development; 2) Exposure to test items appears to be culturally determined in many cases; 3) The chance factors of guessing with a multiple choice format affect scores. This test which is generally useful with children and adolescents did not appear to be effective with adults in this situation.

Evaluation for Learning Disabilities

The total number of persons served directly was 25. With 3 exceptions, all students received a full diagnostic evaluation using the Woodcock-Johnson Psycho-Educational Battery. The three persons who were not administered these tests received alternative, appropriate diagnostic testing. Table 2 presents

Table 2

Number of Persons served by project by sex and age

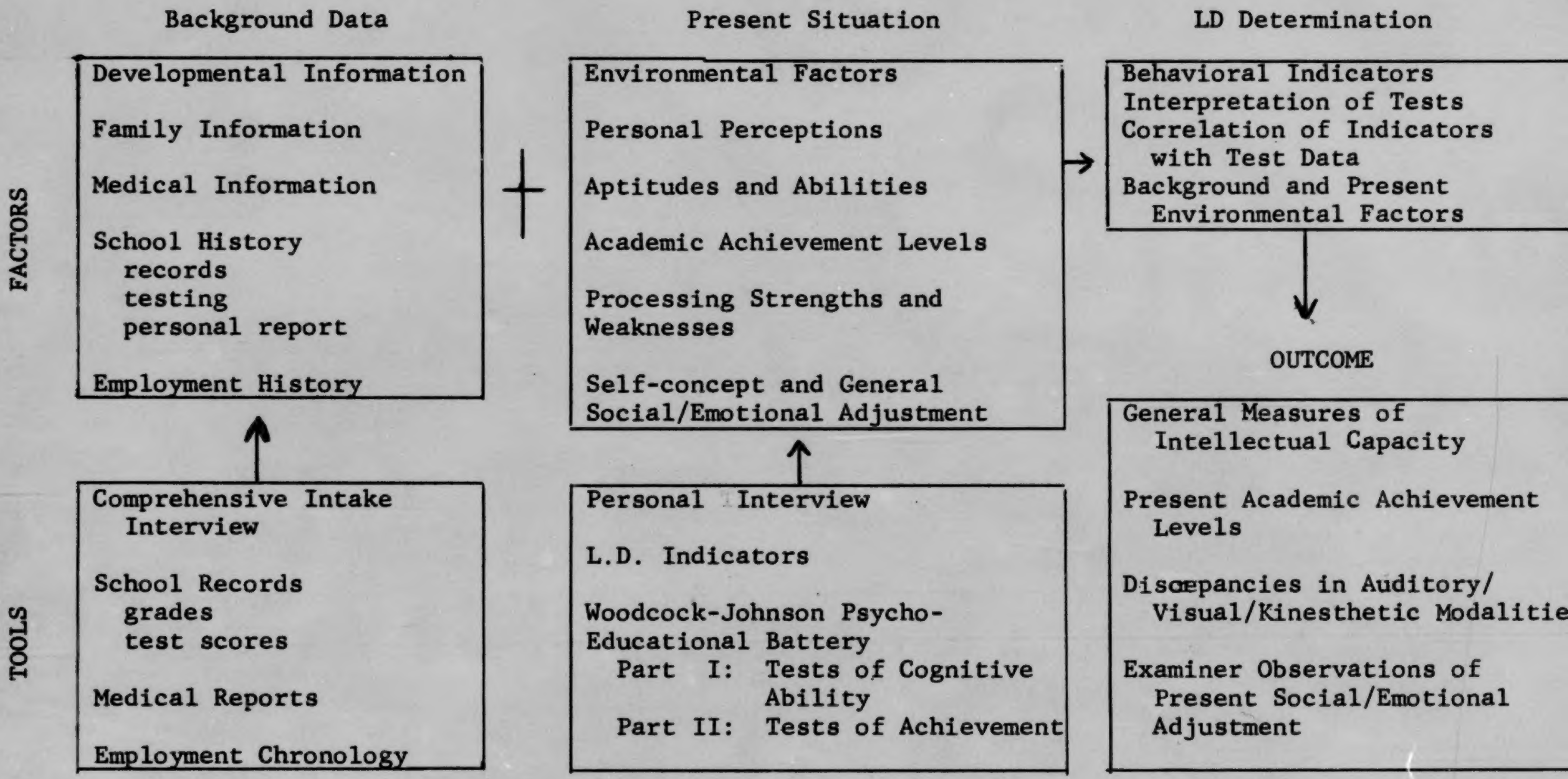
Age	Male	Female	Total
16-21	10	2	12
22-27	2	1	3
28-33	3	1	4
34-39	2	0	2
40-50	2	1	3
50-60	1	0	1
Total	20	5	25

the data by age and sex. It can be noted that the ratio of males to females was 4:1. This proportion is felt to be a fairly accurate sample of LD in the general population. Nearly half of the persons were 16-21 years old. All of these young adults had dropped out of public school and were returning to Adult Education to receive their G.E.D.s or High School Diplomas. The preponderance of young adults may indicate that these students with LD haven't give up on their education as have many older adults. Another important factor is that these young adults generally view education as a prerequisite to a good job, whereas many older adults were able to secure employment in labor or skilled trades without a high school education in the past. Additionally many young adults received some type of special help in school while older adults generally did not. Thus, awareness of learning problems and possible remedial steps were generally a greater reality to younger as opposed to older students.

Figure 1 depicts the evaluation procedures in terms of factors and measurement tools. A vital perspective in adult evaluation is the ecological nature of LD at this stage of life. Background and present life situation are crucial in gaining an accurate picture of the problem. It is important to question the adult informally during testing as to the methods he/she is using. Compensation techniques offer many clues to the nature of the

Figure 1

LEARNING DISABILITIES EVALUATION PROCEDURES


Background Data
Present Situation
LD Determination
FACTORS
Developmental Information
Family Information
Medical Information
School History
records
testing
personal report
Employment History
Environmental Factors
Personal Perceptions
Aptitudes and Abilities
Academic Achievement Levels
Processing Strengths and Weaknesses
Self-concept and General Social/Emotional Adjustment
Behavioral Indicators
Interpretation of Tests
Correlation of Indicators with Test Data
Background and Present Environmental Factors
OUTCOME
General Measures of Intellectual Capacity
Present Academic Achievement Levels
Discrepancies in Auditory/Visual/Kinesthetic Modalitie
Examiner Observations of Present Social/Emotional Adjustment
TOOLS
Comprehensive Intake Interview
School Records
grades
test scores
Medical Reports
Employment Chronology
Personal Interview
L.D. Indicators
Woodcock-Johnson Psycho-Educational Battery
Part I: Tests of Cognitive Ability
Part II: Tests of Achievement

learning disability.

The sequence of evaluation procedures was:

1. Collecting background and present situation information through informal intensive interview. The form used to collect personal data can be found in Appendix B. A good rapport must be established during this discussion period and the reasons for the testing thoroughly accepted by the student. All adults in this project were highly cooperative and most appreciative of the help they were receiving.

2. The cognitive battery was administered before the achievement battery to help the adult control the test anxiety many feel. Most had never taken a test that resembled the cognitive tests. The test items become challenging and are quite interesting to most students. The concept of strengths and weaknesses in different areas becomes apparent to the student during the testing in many cases. All students felt successful on several or more of these tests.

3. The achievement battery, administered last, was more uncomfortable as performance of LD students is generally very weak in academic areas. The testing took 1-2 hours per battery and was always scheduled in at least two, and sometimes three separate sessions. The student was assured that all test results would be clearly explained during the interpretive conference.

Interpretive Conference

The scoring and interpretation of the tests by the diagnostician took 1½ - 3 hours. Then a formal evaluation report of 3-7 pages was written and typed. A sample report is in Appendix B.

Interpretive conferences were usually held at the local A.E. Centers so that the AE teachers working with the particular student could participate. The student could invite any family members or close friends to the conference. The diagnostician conducted the conference, which also could be referred to as a staffing. A typical format used followed this order:

1. Diagnostician reads first section of report (background and present situation) and asks student if information is correct.
2. Test results are explained from appropriate test protocol summaries and graphs that all have copies of.
3. Questions and discussion of test scores follow.
4. Diagnostician reads summary and recommendations and carefully explains the term learning disability.
5. Student and AE teachers discuss recommendations and may ask for further clarification.
6. Closure is reached on remedial program for AE or project center or coordination of both, and realistic goals for the student are discussed.

The effect of this conference on adults, particularly on older persons, was often dramatic. Greater awareness, relief that the LD is "no one's fault", hope for the future, and great appreciation of the work done for one's benefit usually made these conferences gratifying for all involved.

The project objective dealing with both direct service and consultant functions read:

> Upon completion of diagnostic testing and evaluation, the individual and his/her A.E. teachers will gain a thorough understanding of the learning problems, educational strengths and weaknesses and goals for remediation through an interpretive conference scheduled and conducted by the D/ET/C at local A.E. project centers.

The evaluation of this objective was accomplished by a brief checklist rating clarity of communication of test results and accuracy of the needs and goals of the individual. Both teachers and students were asked to complete these forms whenever possible. The outcomes of these ratings are presented in Tables 3 and 4. Data was collected from 18 students and 27 teachers (or counselors and administrators).

The results of this checklist show generally favorable response to the conferences. The weakest rating by students was the remediation plan. It appears that students sometimes, especially in severe cases, did not believe that they could make noticeable gains until they were actually involved in education therapy. This hypothesis was confirmed by several students later in their programs.

Table 3

INTERPRETIVE CONFERENCE: Communicating Test Results

Student Responses

Clarity of Explanation	Poor	Fair	Good
Test Results			18
Written Report		1	17
Student's Needs		3	15
Helpfulness to Student			
Understanding of Learning Problem		1	17
Remediation Plan		5	13
Goal Setting		3	15
Opportunity for Questions		1	17
Effectiveness of Diagnostician in Conducting this conference		2	16

Table 4

INTERPRETIVE CONFERENCE: Communicating Test Results

Teacher Responses

Clarity of Explanation	Poor	Fair	Good
Test Results		2	25
Written Report		0	27
Student's Needs		3	24
Helpfulness to Teacher			
Understanding of Learning Problem		2	25
Remediation Plan		4	23
Goal Setting	1	6	20
Opportunity for Questions		1	26
Effectiveness of Diagnostician in Conducting this conference		3	24

The weakest area of the teachers ratings involved goal setting. It is acknowledged by the Project Director that this area was a problem for all concerned. It is difficult to arrive at a definitive, long-range prognosis when the diagnostician has met with a particular student for only two or three interview and test sessions. Thus, at the time of the interpretive conference, several major factors are often not clear; e.g., long-term motivation of student, degree of effective interaction of student with L.D. remedial techniques, environmental influences other than educational therapy in a student's life. Unfamiliarity with specific A.E. program goals also probably contributed to relatively weak goal setting for some students.

Educational Therapy

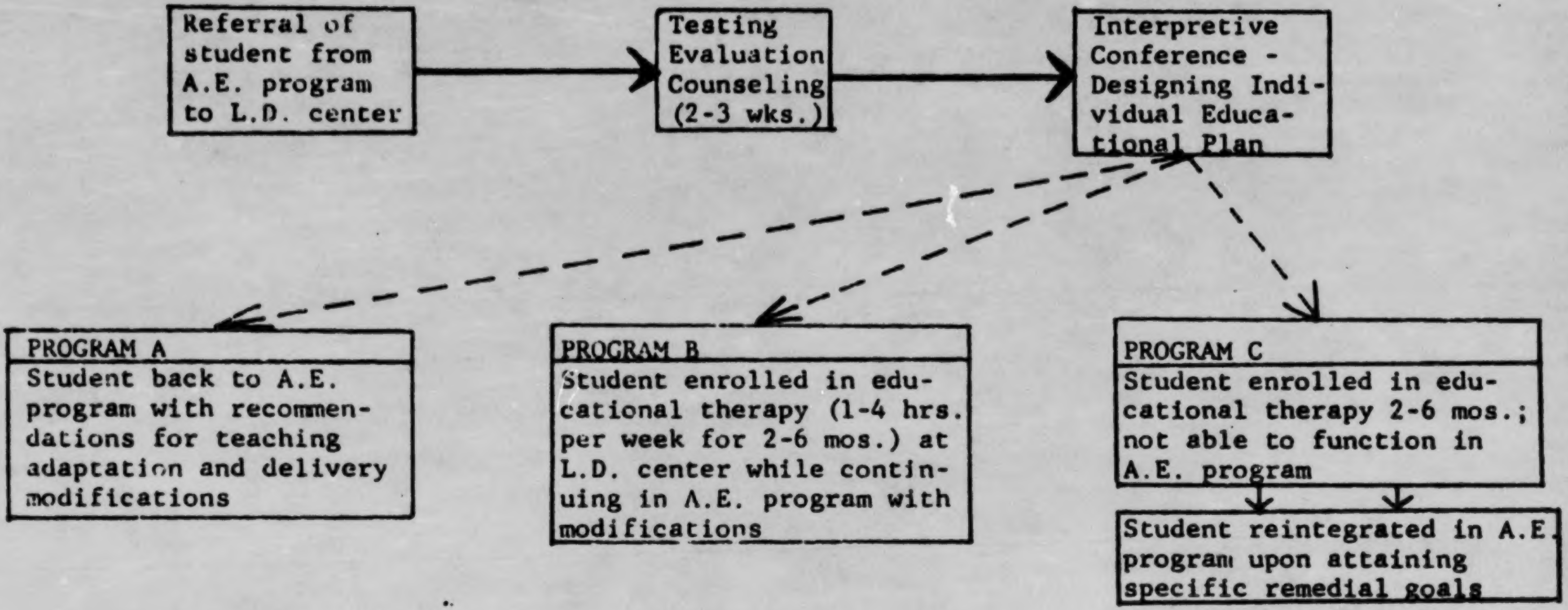
Educational therapy is the term used here for a clinical remedial program delivered on a one-to-one basis. Educational therapy components and principles are discussed in Chapter IX Three main programs were available through this project. The flow chart in Figure 2 describes these three plans for delivery of services. Students were assigned to one of the programs based on results of their evaluations primarily, although practical considerations such as time and transportation were taken into account.

Programs A, B and C represent outcomes of evaluation

Figure 2

SPECIAL DEMONSTRATION LEARNING DISABILITIES PROJECT

FLOW CHART OF ACTIVITIES


Referral of student from A.E. program to L.D. center
Testing Evaluation Counseling (2-3 wks.)
Interpretive Conference - Designing Individual Educational Plan
PROGRAM A
Student back to A.E. program with recommendations for teaching adaptation and delivery modifications
PROGRAM B
Student enrolled in educational therapy (1-4 hrs. per week for 2-6 mos.) at L.D. center while continuing in A.E. program with modifications
PROGRAM C
Student enrolled in educational therapy 2-6 mos.; not able to function in A.E. program
Student reintegrated in A.E. program upon attaining specific remedial goals

Degree of Handicap	Student mild L.D. or not L.D.; can be served effectively within A.E. program	Student moderate to severe L.D. but functioning within A.E. program with some success	Student severe L.D.; not able to function in A.E. program without remedial treatment

depending on severity of handicap, student's needs and present A.E. program. The cycle in Figure 2 depicts programming for one individual student with possible L.D. A number of such cycles occurred simultaneously (although starting at different dates) throughout the major portion of this special project. New referrals for evaluation were accepted at any time through early June.

Students assigned to Program A were not always those with the least degree of problems. Because of factors other than L.D. (emotional, intellectual) a few students were not taken into educational therapy programs so that other students who had more favorable prognosis could be served.

Table 5 is a numerical description of what happened to the students after evaluation. One student moved away before his program commenced; thus, 24 is the total number of students. Nineteen students had individualized programs designed for them and 18 received 10-60 hours of educational therapy. One student assigned to program B was sent away to a juvenile home in another state after one individual session.

Completion of program is defined as students who continued until the grant period ended, or, in two cases, met enough of their goals to complete their individualized work. Of the four students in Program B who did not complete their programs, two were teenagers who were experiencing so many personal problems that they could not devote energy to educational endeavors at that time. Two others were enrolled at a local ABE center through an employment training program. Their funding was cut and they were dismissed from the center because they had not made rapid enough academic progress to qualify for the job training. Their slow progress was, of course, due to their learning disabilities. Both of these individuals had received about 20 hours of educational therapy and were doing very well. Their dismissal from the employment program was so abrupt that their lives were too disrupted to continue with this project.

The lower section of Table 5 indicates optimal plans for the 14 students who completed this project. Of this total, 6 will most likely be able to continue their education successfully within an ABE program. The 5 recommended to post-program B will be able to function as AE students with special assistance. The 3 shown as post-program C have learning disabilities too severe to gain much within a traditional ABE program. Several of these persons are attempting to secure help through Vocational Rehabilitation.

Table 6 shows the total number of hours of educational therapy students received in multiples of 10 hours. As a rule, the students receiving the greatest amount of educational therapy were those who were referred to the project the earliest in the fall. Until March there was a waiting list for testing. The progress that students made in educational therapy is presented in chapter IX.

Table 5

Program Plan Assignment

	Program A	Program B	Program C	Totals
Number Students	5	11	8	24
Number Receiving Educational Therapy		10	8	18
Number Completing Program		6	8	14

Post-Project Recommendations

Number Students	6	5	3	14

Table 6

Number of Hours of Educational Therapy

	Number of Hours	Number of Students
	10-20	7
	20-30	5
	30-40	1
	40-50	3
	50-60	2
Total	513	18

Average Hours of Therapy Per Student = 28½

Samples of final reports and progress and growth charts are included in Appendix A.

The remedial work for each student was in many instances carried out by more than one educational therapist. Staff changes, additional responsibilities for the project director, and specific training of teachers by the project director were among the reasons for two or more persons working with a student over the course of his program. Additionally, when a teacher was out of town, another teacher temporarily took over with students so that their programs were not interrupted. This interchangeability of staff was felt to be a positive aspect of the project. Techniques and materials were similar enough to provide the necessary consistency; yet the personal styles of the several educational therapists added more instructional diminsions to students' programs. The cooperative attitudes of the educational therapists were frequently and positively reflected in students' casual relationships with each other at the clinic center as well as in their academic work.

Student Follow-up

The project objective pertaining to follow-up of individual students was stated in terms of 're-integrating' the students served into the local A.E. programs from which they were referred. Activities relating to follow-up are planned for September and October, 1980 and will be carried out by the educational therapists acting in a consultant capacity to A.E. teachers.

General components of follow-up as planned are:

1). Discuss final individual student report that includes progress made in educational therapy

2). Make recommendations for materials and techniques that could be used in A.E. setting

3). Suggest any modifications in delivery that would be helpful to student

4). Provide opportunity for ample discussions of student goals

Reintegration of a student into a regular program after receiving special services is termed 'mainstreaming' in the public schools. The goal of mainstreaming is to help a student function as well as possible within a regular school program given special adaptations and support as appropriate.

A small grant has been awarded to the Jefferson County Adult Education Center to design an effective mainstreaming model for their students with learning disabilities. The two persons responsible for carrying out the mainstreaming grant were involved in this project as staff. Thus, the carry-over and follow-up for this project with the students from Jefferson County Center (majority of those served) should be very thorough. The continuum of services provided by these two projects extending to a two year period for some students will have a far-reaching effect on determining the effectiveness of A.E. programs in meeting the needs of their learning disabled population.

Outreach Activities and Related Projects

Local ABE Directors in the Denver Metro Area were directly contacted by phone, letter and in serveral cases, personal visits by the project director or other staff to inform them of the services available for their students through this project. Additionally, various community agencies were made aware of the project through informal contacts with the project director. Included in these organizations were Vocational Rehabilitation offices (local, state and regional), community mental health groups, and employment training programs. A letter from David Gies, Facilities Specialist for Colorado Vocational Rehabilitation, stated that students being served by this project that needed special services in addition to educational therapy (e.g., medical, speech) would be aided if they met the eligibility criteria of Rehabilitation quidelines.

A meeting was set up to establish communications between a local Rehabilitation office and A.E. teachers. The meeting, occurring in late spring, appeared to be beneficial to all participants in gaining a better understanding of the types of services sponsored by Vocational Rehabilitation.

Information about this project and the adult with L.D. was presented at the annual state Council for Exceptional Children Conference in Colorado Springs in March. Part of the presentation consisted of the viewing of the videotapes described below.

A major contribution to the state on adult learning disabilities (although not funded by this project) was the development of a series of videotapes by the project director on three aspects of L.D. The purpose of the tapes was to provide a non-expendable form of teacher training material that could be used not only immediately, but also for training workshops in the future. These tapes, (expressly arranged by Dr. Sig Johnson, Director of Jefferson County Adult Education) were filmed by Jefferson County School District at the learning disability clinic in Wheat Ridge. The content of the two videotapes is comprised of five segments. The first segment entitled "A Clinical Setting and Issues of Working with Young Adults with Learning Disabilities" includes a discussion of three L.D. teachers about general life problems encountered by their students. The second tape segment "Growing Up with a Learning Disability" focuses on the conversation of two young men with LD about problems they experienced in school, at home and in employment situations. The content of the second tape is a simulation of an educational therapy session in which materials and techniques are shown. Specifically, the topics are:

Part 1: "Scheduling, Warm-up and Encoding Analysis"
Part 2: "Modification of a Reading Habit"
Part 3: "Spelling, Word Structure, Word Strategies"

These viedotapes are available for loan from the Colorado Adult Education Resource Center in Englewood, Colorado.

A major project that took place in Colorado in FY 79-80 was a state teacher training program. While the teaching training project was in no way related to this direct student service grant project in terms of funding or responsibilities, the two separate projects did facilitate noteable progress in serving ALD enrolled in A.E. programs in the State of Colorado. About six A.E. teachers in the Denver area were involved in both projects.

The general goal of the teacher training project was to develop a firm foundation for a learning disabilities program within Adult Education for the State of Colorado. The primary responsibility of the learning disabilities consultant was to design and teach a class that would provide three selected groups of A.E. teachers with an overview of the field of learning disabilities that could be applied directly for the benefit of all students served by local A.E. programs. The training program was delivered primarily in the form of graduate level classes for Colorado State University Continuing Education in three geographic locations: Denver Metro, Southern Colorado and Northern Colorado.

CHAPTER II

THE ADULT WITH LEARNING DISABILITIES

Current Status

The past decade has seen rapid growth of services for children identified as learning disabled. The enactment of Public Law 94-142 in 1975 is creating a major impact on schools and society by mandating free appropriate public education for all handicapped children. At this time special programs for learning disabled students are available in the majority of elementary schools across the country. Within the past few years efforts have evolved to deal with adolescents with learning disabilities in secondary schools.

Adults with learning disabilities have seldom had the opportunity to benefit from an education suited to their special needs. They have experienced failure many times over since their earliest school years without understanding why. Many of these adults dropped out of school; others managed to "bluff their way" to a high school diploma. Others were inappropriately placed in school programs for the mentally retarded where frustration increased. Still others with high intellectual ability and strong motivation have found it extremely difficult, and often impossible, to pursue a college degree because of arbitrary admissions policies and inflexible class procedures.

The only term that would describe these persons as a total group would be "struggling". They are struggling to survive, dealing with a world that is complex and often seems unfair. They are struggling to cope with a problem that most do not understand. The adult with learning disabilities has long been neglected in our society. The needs of adults with this handicap are rapidly emerging concerns as we enter the 80's.

Adult Basic Education and public institutions of higher education are moving with hasty confusion to identify and serve their learning disabled populations. The impetus for these efforts appear to be different for each of these two groups. Adult Education is slowly responding internally to the special educational needs of a sizeable percentage of its students through the development of special demonstration projects, teaching training and methods/materials guides in various parts of the country. Colleges and universities are gearing up to meet external demands, compliance with Section 504 of the Rehabilitation Act of 1973 which prohibits discrimination on the basis of handicap in any post-secondary education program receiving federal funds.

Vocational Rehabilitation, the federal agency that has dealt with training and employment for the mentally and physically handicapped for fifty years, has recently become concerned about officially extending its services to the learning disabled. A federal Task Force formed under the Department of Education is currently examining the issues of LD with the goal of defining parameters of rehabilitation services to LD handicapped adults.

The most influential organization in creating public awareness of the needs of adults with learning disabilites (ALD) is the Association for Children with Learning Disabilities (ACLD). The group was formed by parents in the early 1960's and currently has over 50,000 members with many active state and local organizations throughout the country. Much current legislation dealing with LD school age children resulted from the persistent efforts of ACLD members. At the 17th Annual International ACLD Conference held in Milwaukee in late March, 1980, a major step was taken. ACLD changed its name to Association for Children and Adults with Learning Disabilities. This offical recognition, the component group ALDA (Association for Learning Disabled Adults), and the existence of a major conference strand on adults indicates the serious intentions of this organization to grapple with the issues of ALD.

Far outweighing these recent positive developments is the fact that children and adolescents identified as LD are growing up to be adults with LD. This fact is uncomfortable to public school administrations and LD teachers and many others who are involved in providing services for LD children. Certainly early identification and treatment can ameliorate deficit areas and contribute greatly to emotional adjustment. However, there is growing awareness among LD professionals and a sobering reality among parents and students that LD cannot be "cured."

A highly respected leader in the field of learning disabilities, Dr. Corrine Kass of the University of Arizona, is known for her research work with a systems approach to the identification of LD and her classification of LD according to age-related deficit functions. Dr. Kass's model of age-related deficits provides a theoretical framework that the auther of this report has found applicable and adaptable to ALD. In the article that is quoted below, Dr. Kass uses the term "dyssymbolia" to refer to carefully defined specific learning disability.

> Dyssymbolia is probably a handicap for life. The symptoms vary with age, and certain negative overlays may be averted with remediation, but the condition remains at maturity. Symptoms may be reduced somewhat at the later age-related functions if earlier symptoms are alleviated within a

> sensitive age range, but it is always possible that some symptoms of dyssymbolia after age 14 could not be predicted earlier.[2]

Longitudinal studies of LD individuals also refer to the persistance of LD across age spans. In a five-year project examining three major problem areas of LD it was stated that the "deficits were not transitory but remain at adulthood."[3] One of the few major follow-up studies done with LD adults concluded that

> ...dyslexia might be viewed on a restricted continum-restricted in the sense that even though the extent of reading retardation may vary for individuals, a specific deficit is present and problems in this area will persist into adulthood.[4]

There is a paucity of research on the adult with learning disability; the longitudinal effects of the condition cannot at this time be validated. However, numerous case studies, anecdotal records, reports of teachers, observations of many who have encountered persons with LD and testimony of learning disabled adults present ample evidence of the lifelong nature of these problems.

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[2] Corrine Kass, "Identification of Learning Disability Dyssymbolia", Journal of Learning Disabilities. vol. 10, no. 7, 1977, p. 428.

[3] E. Hoy, G. Weiss, K. Minds and N. Cohn, "The Hyperactive Child at Adolescence: Cognitive, Emotional and Social Functioning." Journal of Abnormal Child Psychology, vol. 6, no. 3, 1978, p. 323.

[4] J. G. Frauenhein, "Academic Achievement Characteristics of Adult Males Who Were Diagnosed as Dyslexic in Childhood." Journal of Learning Disabilities, vol. 11, no. 8, 1978, p. 482-483.

Brief Definition and General Needs Assessment

The following general definition was developed by the report author to establish common ground in an ABE teacher training project in Colorado.

> A person who has a learning disability (LD) has difficulty dealing with the information from his/her environment in many situations because the ways he/she takes in and processes information on a neurophysiological basis are distinctly different than the majority of individuals in a given culture. LD creates many problems for these persons in educational settings, home and social life and in employment.

A person with a learning disability usually has several deficit areas and many covert symptoms. In adults these deficits and symptoms take on many highly individual characteristics, as the person has had years of interacting with his environment and trying to cope with problems he probably doesn't understand. While an actual neurophysiological disorder is involved in a true LD condition, the disability is not readily discernible in a majority of cases. Thus, this "invisible handicap" makes it very difficult for a casual observer to note difficulties. This lack of overt physical or mental impairment also hinders ALD (adults with learning disabilities) in being properly identified and receiving assistance for their problems.

Is a learning disability actually a handicap? In many cases it is; in other cases it is not. The following statement provides a basis for interpretation.

> If the LD condition impairs an individual's ability to attain functional education and life skills and to secure and maintain gainful employment for independent living, then the LD should be considered a handicap.[5]

The first part of this definition is obviously subject to wide variation of opinion. We would all agree that some level of reading skill is functional to life in our complex society where a premium is traditionally placed on education as the path to success. Functional literacy may be considered at an 8th grade reading level and declining. The GED is written at an 8th grade level.[6] But consider these facts:

1. One out of every four students has significant reading deficiencies.
2. Twenty-five million job holders are denied advancement because of inability to read.
3. At least thirteen percent of the adult population have serious reading problems that impair their daily lives.
4. There are twenty-three million illiterates in this country.[7]

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[5] Hollybeth Kulick, Directress and Founder, Kulick Foundation for the Adult Learning Disabled, Denver, Co. 1980.

[6] Lucy Stromquist, Director, GED Center, Longmont, Co. 1980.

[7] Helen Grush and Ellie Shacter, The Grush Method, Alphapress. Lexington, Mass. 1978. (Items 1 and 2 from Dr. James Allen Jr., Assistant Sec. of Ed. and U.S. Comm. of Ed., March, 1970; Item 3 from a Harris poll for the Nat'l. Reading Council).

These statistics are not synonomous with LD; many other factors are involved - opportunity, culture, mental handicaps, etc. However, many ALD would be among these non-functional readers.

A remediation goal established for severe dyslexics with aphasia served by this project and at ADS is typically fourth grade level. As the learner reaches a plateau in his progress with basic phonic and linguistic skills the content emphasis of the program is changed to survival reading using many materials of the student's choice. At the completion of the program the ALD usually views himself as a "functional" reader and accepts his limitations.

The goal for less severely involved ALD is often the attainment of a GED. For other ALD the functional goals may be college preparation, writing skills to maintain a job position, adequate communication skills to seek employment, strategies for interpersonal communications in a job situation to keep from getting fired. Less directly work related functional skills might be passing the driver's test, reading a map, learning to tell time (internalizing what is read on a clock face), dealing with a checking account, etc. In sum, what comprises "functional educational and life skills" depends on the individual's particular situation - the severity of the LD, presenting educational level, intellectual ability, motivation and life circumstances. Table 7 (page 35) presents a classification of LD severity based on educational level.

The second part of Ms. Kulick's definition, "to secure and maintain gainful employment for independent living," offers criteria with greater unanimity. This means to obtain and keep a job that pays enough to support oneself without additional aid from family or welfare. In the case of the primary wage earner in a family, that person needs to meet the minimal financial responsibilities to support his family. When the adult with LD cannot sustain himself/herself independently due to the LD, then the LD condition should be considered a handicap. A later section of this chapter, "Societal and Employment Status of ALD," discuss three common employment patterns observed in ALD.

Table 7 lists the number of persons at three levels on two diminsions of handicapping conditions, literacy and employment status. The learning problems of each of these 24 persons, without exception, were the prevailing reason for lower literacy and for reduced job opportunities. Of the 10 persons listed as having no gainful employment, 3 were enrolled in job training programs and 2 had just completed their G.E.Ds and were entering the job market. "Minimal employment" refers to temporary work.

Of the 5 persons holding steady jobs, two were able to provide total support for their families.

Psychological Correlates of LD

All individuals with learning disabilities experience emotional and social adjustment problems to some extent. The failures and frustrations met in early school years indelibly mark the self-concept of each person.

The psychological problems that often surface in children with LD as behavior problems in school are referred to as "emotional overlay." In other words, emotional difficulties are not the primary problem; psychological problems are the result of the primary LD problems. It is logical that cumulative messages to the effect that one is not competent at certain tasks would produce behavioral deviations. Two common patterns of reaction to continual failure are: 1) To strike back with hostility and prove oneself in other ways which may lead to socially unacceptable behavior; and 2) To withdraw from situations passively and hope that others don't notice shortcomings. Probably the majority of LD adults gravitate toward the latter pattern, not wanting to call attention to their problems. There is much speculation (and a small amount of evidence) that those whose aggressive responses result in extreme antisocial behavior may constitute a disproportionately large number among juvenile delinquent and prison populations.

It is optimistically predicted that children with LD growing up today will not have to go through the same degree of failure that adults had to. While a child with LD will still feel isolated from others and frustrated by tasks he cannot do, he does have the benefits of more appropriate education and a far wider support system of people. The greatest advantage of new laws and strong parent advocate groups may be the publicity leading to greater acceptance of the LD child in society. The better school programs have made real efforts to communicate the child's problem to him as soon as he is old enough to understand it. Opening up a problem naturally leads to dealing with important feelings, to greater acceptance of the problem, and healthier emotional adjustment. When a person can accept his limitations and feel like he is a worthwhile individual, he is equipped to deal with the insensitivities of others.

Unfortunately, very few adults had opportunities to develop in this type of positive environment. Personal anecdotes of punishments by school officials and parents reveal gross misunderstanding and cruelty, both mental and physical. Common assumptions made were either that the student was "dumb" and incapable or that he was lazy and not trying hard enough. The acceptance of either possibility has a powerful negative impact on personality development during formative years. ALD may feel a great deal of fear, distruct or hatred toward schools and teachers.

Immaturity, unrealistic expectations of self and others and poorly developed peer relationships are frequently cited psychological problems of LD persons of all ages. Such difficulties do not develop only in response to personal failures, but in many cases, are symptoms of the actual learning disability itself. Inability to interpret social cues, either verbal or non-verbal (due to several underlying problems, e.g., auditory perception, language syntax, cognitive organization) is clearly a characteristic of some types of LD. Poor interpersonal communication skills frequently account for a sizeable proportion of the individual's general life adjustment problems. On the other hand, the highly verbal types of LD may be very social, gregarious people that are experts in manipulating others. Despite this well-developed and often effective coping mechanism, careful observations show many underlying cognitive disturbances with cause-and-effect relationships, goal-setting, planning and organization, problem solving, decision making, etc.

Among affective behavioral characteristics of LD students, Dr. Dale Jordan lists "super-sensitive, extremely insecure in group setting, avoidance/defense behaviors, personal problems constantly interfere with academic progress, single-minded about solving problems, and childish maturity partterns."[8] Given a host of possible social and emotional problems encountered by the LD adult, the only unquivocal characteristic applying to all ALD is lack of self-confidence. Low self-confidence is obvious in some cases; in other instances, superficial bravado is observed as a coping behavior that masks poor confidence. Even when tangible life success has been achieved, the LD individual invariably doubts himself.

Three typical patterns of emotional behavior and the number of students involved in this project falling into each category are presented in Tables 8 and 9. The difference between "overtly stable" and "goal-searcher" appears to be developmental to some degree; more individuals over 30 fall into the first category while more individuals 18-30 are in the second category. However, this trend does not always apply to individuals.

Age seems to be no determinant for the "psychologically vulnerable." A few of the persons in this latter category were not always functioning within broad behaviroal range of social normalcy. Thus, their psychological problems often precluded steady academic progress.

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[8] Dale Jordan, "Learning Disabilities Characteristics of ABE Students," Jordan-Adams Learning Center, Oklahoma City.

Those ALD who are described as "goal-searchers" may have attendance problems with jobs, educational programs and personal responsibilities. This topic was the focus of a teacher discussion in one of the videotapes mentioned in Chapter I. Specific problems mentioned were car trouble, weather conditions, frequent illness, conflicting scheduling, accident-prone, etc. Minor life inconveniences often become major hurdles for some ALD. Typically great plans for the future are discussed but are seldom organized and followed through in reality. Many life changes seem to characterize the goal-searcher. The young adult with LD, in particular, appears to be vulnerable to many life circumstances over which he/she seems to be unable to control. Attraction to fundamentalist religion or heavy drug use seem to be more prevalent among this group. Predictable life problems with dating and sex, personal identity, parental separation, etc. often appear to be accentuated and prolonged, and generally more difficult for the ALD to negotiate. Again, this observation is a broad generalization not applicable to all individuals.

ALD characterized as "overtly stable" usually hold steady jobs, are married and have families. Although this life situation is more prevalent in the age group over 30, several young adults in their early twenties fell into this category. To the casual observer, these ALD appear to be reasonably well-adjusted, successful people. However, many familial problems of varying seriousness, particularly with older ALD, do exist.

Most of the psychological problems cited by LD adults and their families stem from not understanding their handicaps, not sharing their disappointments, and trying to maintain a stoic, furtive attitude about the problem. The family dynamics of a middle-aged man with dyslexia are presented in this excerpt of a psychological case study:

> Although Mr. W. was quite successful in his occupation and in covering up his ever-present disability, his dyslexic condition led to much dysfunction in the relationships within his family...Because of Mr. W.'s inability to read, most household tasks and budget decisions had to be handled by Mrs. W...During their marriage, Mr. W. was increasingly placed in a dependent, subordinate position to his wife. Because of his immature, explosive, unpredictable behavior and his constant demands for praise for anything he did, his wife resented his behavior and began to treat him more like a child and less like a marriage partner...Mr. W.'s inability to read was central to the almost constant tension and emotional distance between himself and his wife. Ironically, it was also a major reason they cited for staying together, in what can be described as a very enmeshed, dependent and destructive relationship.[9]

One of the rare articles about the LD adult appearing in a professional journal was written by a psychiatric social worker who reports several case studies. One individual had a history of mental institutionalization; the other learned to read at age 18 and struggled in college. Ms. Cox reported a sizable number of residents in psychiatric facilities whose LDs contributed to the development of their severe mental problems. She then summarizes the situation of the average ALD:

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[9] L. Lenkousky and D. Saposnek, "Family Consequences of Parental Dyslexia," Journal of Learning Disabilities, 11:1 (1978) p. 47-53.

> For every emotionally disturbed individual who cannot deal with the stress of continued and misunderstood failure, there surely must be hundreds more who have not responded in such a severe way but who, nevertheless, function in the community in menial jobs, with poor self-concept and the belief that they have failed themselves, their family, and the social system which strongly stresses social status, productivity, and "making something of yourself".[10]

To ameliorate mild and moderate ajustment problems, three services are recommended: educational remedial therapy, family psychotherapy, and participation in groups for LD adults. The latter promises to be a postive influence for these persons. Such groups are getting started in this country as the LD adult is beginning to emerge publicly. A group for ALD was formed in Denver about a year ago, and meets regularly to discuss common problems faced and to socialize. Hopefully these groups will be sources of support and information for these adults of all ages.

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[10] Sheralyn Cox, "The Learning Disabled Adult", Academic Therapy, 1977, vol. 13, no. 1, p. 81.

In her article "The LD Adult" (cited above), Ms. Cox suggests assertiveness training as a realistic way to help LD people learn to deal more effectively with their problems on both a personal level and societal level where discrimination occurs. These groups could provide a good setting for such work on assertiveness. If funds could be procured, family therapy of at least short-term duration would be recommended to nearly every LD adult. In a clinical situation it has been found that as a person makes progress in educational therapy and gains new skills, old patterns of family relationships are no longer adequate. In many cases professional psychological assistance is warranted. The personal counseling that is an integral component of educational therapy is critical to an effective academic remedial program, and is usually adequate for the typical adjustment difficulties prevalent among ALD. The dynamics involved in educational therapy are presented in greater detail in Chapter IX.

Employment Patterns

Three distinct employment patterns have become apparent over several years of working with ALD. These employment categories were also evident among the individuals served by this project in roughly the same proportions.

The first group is labeled the "stable underemployed." The employment situation characteristic of these persons is holding a steady job for a number of years doing manual labor or semi-skilled or skilled trade work. These people tend to be very good employees; they are dependable, reliable and hard-working. They try hard not to create any problems in work situations that would place their jobs in jeopardy. Their job positions require minimal, if any, reading and writing. LD adult learns quickly how to compensate so his handicap is not discovered in his work. Terms are memorized and elaborate schemes are devised to avoid responsibilities involving printed material. With few exceptions, ALD are denied promotions because of their limited educational skills.

Employment status of the second group is changeable; the category is "chronic job seekers." Individuals in this group tend to seek jobs they feel they are capable of handling, yet do not have the necessary skills. Typically, they start off and do well in a job until either lack of literacy skills or interpersonal communication problems interfere with their performance. Then, they are fired or let go or quit when it is clearly not working out. These ALD often try a wide variety of jobs, hoping that one day they will find permanent, satisfying work. Through this pattern of "job hopping" they often acquire experience with many types of work. An unfortunate result of this pattern of employment is a poor job record which often hinders securing future employment.

The third category of work patterns is unemployment. The majority of those who are unemployed have held steady jobs in the past; a few have never held permanent jobs and are on welfare or are supported by their families. A very common employment circumstance that unemployed ALD seeking educational help find themselves in follows this sequence:

1) Steady employment involving physical labor
2) Accident injury or chronic illness
3) No longer able to do certain types of work
4) Need better educational skills to acquire non-physical labor job

These persons are usually involved in workmens' compensation proceedings. They are highly motivated to improve their skills and many want to prepare for college education or a specific job training program.

Table 10 shows the number of students in the project by employment category.

An aspect of work that all three groups of ALD share is underemployment. Of the several hundred ALD that the information here is based upon, only three individuals could be judged as having steady, relatively challenging and satisfying work that utilized their talents and skills. As was mentioned above, even those gainfully employed ALD seldom receive promotions

Table 10

Employment Status of ALD by Age Groups

	Job Patterns			
Age Groups	Stable Underemployed	Job Seekers	Unemployed	Total
16-21	3	4	5	12
22-27	2		1	3
28-33	2	1	1	4
34-39	1		1	2
40-50	2		1	3
50-60	1			1
Total	11	5	9	25

they deserve because of their low literacy. Thus, job satisfaction decreases over a period of time. Concomitantly job mobility is lower. New opportunities for ALD are scarce. Job security, particularly when family support is a factor, often appears to be more important than a better job with all unfamiliar circumstances. Having to devise new compensation systems is not easy for many ALD.

Many of those in the job seeker classification find themselves doing day labor or other temporary positions. Some try a progression of job training programs, each time dropping out when the program manuals become too difficult to read.

An additional obstacle that nearly every learning disabled adult encounters is the job application. Completing job applications is a prime source of frustration for any with reading and written expression problems. The visual-spatial arrangement of the forms are also very difficult for many ALD to negotiate. Furthermore, there is little uniformity among application formats.

ALD relate accounts of how they compensate to avoid embarrassment in the application situation. A typical ploy is to feign illness or another appointment and ask to return the completed application at a later time. Then with help from family members they spend inordinate amounts of time filling out the forms.

The reader may note similarities between the three job patterns and the three psychological categories discribed in the previous section. That is, the overtly stable may appear to be the stable underemployed; the goal searchers, the job seekers; the psychologically vulnerable, the unemployed. While it is felt that there is some relationship between the first two sets of categories, it is not exact. Many exceptions can be cited. The third set of categories have only slight overlap in terms individuals fitting both unemployed and psychologically vulnerable groups. The injury circumstance for unemployment, especially, does not correlate with any specific psychological adjustment pattern discussed here.

CHAPTER III

THE LEARNING DISABLED IN ADULT EDUCATION

A Special Needs Population

Adults with learning disabilities have always existed, and have been noted among adult education populations for many years. While ALD have not been identified and treated as exceptional learners until very recently, the problems these individuals experience in their classes have long presented challenges to their ABE teachers.

Public school programs for the learning disabled were first initiated at the elementary level in the mid-1960s, with fully operational programs not being prevalent until the mid-1970s. Identification and treatment at the secondary level was established even later. Hence very few adults over 20 years of age have received appropriate assistance. Those who are teenagers typically have dropped out of school, thus not many ever enrolled in public schools at the time when special programs were available. Of the 12 16-21 year olds in this project, 3 had received special help in a lab situation in junior high or high school. However, in each case, the treatment was too little or too inconsistent for these individuals to make steady gains. The present status of LD services in secondary schools and its future ramifications for adult education programs are discussed in Chapter IV.

How many students enrolled in adult education (A.E.) programs have learning disabilities? Two authorities in the field claim 60%[11] and 75%.[12] These and other frequently cited estimates usually refer to those students enrolled in Adult Basic Education (ABE) whose reading grade level is 0-8. In 1978 ABE/LD-TV in Indiana conducted a survey dealing with the learning disabled adult. The 35 participants were all involved with ALD in adult education settings. Given three choices, 48% of the respondents agreed with 60% incidence; 45% chose 20%; and 7% felt that only 3% of ABE students were LD.[13] How can the prevalence of LD students in adult education programs be so great when 2%-15% of school-age children are considered LD? Several factors need to be considered:

1). Adult Basic Education serves those persons who have not been able to complete their desired education in public schools as they were growing up, either due to lack of opportunity or to problems experienced in the course of learning. Of this latter group, it can be inferred that many have learning disabilities.

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[11] Laura Weisel, Director, Adult Basic Education. London, Ohio, 1978.

[12] Dale Jordan, Jordan Adams Learning Center, Oklahoma City, Oklahoma, 1975.

[13] Michael Parer, ABE/LD-TV Special Project, Bloomington, Indiana, 1978.

2). The learning disabled adult is frequently well-motivated to improve his/her academic skills and knows that he/she does have the ability. Thus, gaining a basic skill (e.g., GED) become and important value in the person's life and help is sought.

3). Adult education programs are typically far less threatening (educationally and financially) to low-level achievers than other avenues of education; e.g., community colleges, speed-reading courses, private vocational institutes. Seeking a self-paced non-competitive learning environment (as available at most ABE centers) is a logical way to continue education.

These three factors are explicative, and would be agreed upon by most adult educators. Consequently, the propensity of ALD to gravitate toward Adult Education greatly increases their numbers in these settings. Carefully estimated numbers of ALD in AE based on severity levels are presented in Chapter V.

The results of the Indiana survey mentioned above found that the three most common perceptions of LD students by adult educators were: 1). A dysfunction in processing information; 2). Difficulty learning by traditional means; and 3). Difficulty in acquiring basic skills. The most frequently cited manifestations of LD were problems with visual and auditory perception, memory integration, following directions and emotional stability. It is of importance that respondents to this survey did not include hyperactivity, impulsivity and poor motor condination as characteristics of LD in adults.[14] Thus, three typical symptoms of LD in children do not appear to be major factors in the adult condition. While it is well-documented that hyperactivity greatly decreases during adolescence, all three of these manifestions are still present in some ALD. However, most adults have compensated and developed adequate social skills so that hyperactivity, impulsivity and poor motor coordination are no longer highly visible signs of their disability, at least in a class setting. In sum, a major developmental change occurs in the manifestation of LD as a person matures.

The Adult Educator's Approach to LD

The adult with learning disabilities is such a recent phenomenon in education that there is yet no known accredited teacher training program in this area. Furthermore, a paucity of research data on ALD precludes the establishment of any comprehensive program at this time. The educational field of learning disabilities has emerged as an area of special education as the present school-aged population has grown up. Thus, a sizeable body of knowledge is available on LD, but only with a degree of validity for children. (Much of the early research on LD is under strong criticism, with new models and treatment methodologies emerging every few years). The special problem is stated by George Travis:

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[14] Ibid.

> An adult educator, by training and experience, knows that adults are a great deal more than "big children." In addition to physical maturation, the adult brings a lifetime of coping and avoidance behaviors to learning situations which children lack.[15]

Who is dealing with ALD? One can surmise that very few teachers are certified in both adult education and in special education. A few learning disabilities specialists have developed skills with adults in clinical, university and AE settings as the need became obvious. Many adult education teachers are currently learning more about LD through special training projects.

From a learning disabilities perspective, adult educators' knowledge of LD and approach to remedial education appear to vary widely along a continuum ranging from lack of rudimentary concept of LD to a sound, practical understanding of the condition. Most AE teachers place themselves at the lower end of the knowledge spectrum. On the other hand, a positive factor that seems reasonable to generalize to AE teachers is their observable concern and sensitivity to the problems of their students having learning difficulties. The majority of AE teachers clearly do not wish to perpetuate negative student-teacher relationships and failure experiences that LD students encountered in their public school years. Thus, the ALD, while perhaps still not making much progress with learning, is generally treated with dignity and respect on a personal level in the adult education setting.

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[15] George Travis, "An Adult Educator Views Learning Disabilities," Adult Literacy and Basic Education, Summer, 1979 p. 89.

Several cautions have to be made about excessive nurturing treatment of ALD. One danger of a sympathetic approach is that it tends to offer unrealistic goals to severely involved students. A GED or high school diploma is not feasible for individuals with severe LD. More counselling and lower goals should be substituted for long-range promises that are clearly unattainable (and frustrating) for these students.

Another disadvantage of the sympathetic relationship is that it quickly leads to student over dependence on the teacher. A pervasive teacher-to-student attitude of kindness and concern is undubitably important to the students' self esteem and continued attendance in the program; however, the interpersonal projection of sympathy does not lead to self-motivated improvement on the part of the student. Furthermore, sympathetic teacher-student relationships carried out as tacit program philosophy may result in ineffective educational delivery and poor accountability in respect to educational goals.

Experience with teacher training reveals a clear dichotomy of teaching styles: adherence to scope-and-sequence or flexible, individualistic. Good teachers are found with either style. However, only the latter philosophy will be highly effective with the exceptional learner. There is no prescribed curriculum for educational therapy; there are no "standard LD methods" that guarantee success. The distinguishing features between tutoring and educational therapy are defined: Tutoring is teaching skills in any prescribed manner, whether the method be traditional or multisensory. Educational therapy involves guiding the learner in the development of strategies for gaining new information in the most personally effective manner; i.e., learning how to learn. As stated, educational therapy demands adaptability, creativity and the willingness to experiment and improvise on the part of the teacher. Certainly there are as many adult education teachers as there are teachers at any grade level who can approach the LD learner in this flexible manner with positive results.

A recurrent problem in working with ALD in ABE is teacher-student ratio. The perspective of this project was a clinical model of adult educational therapy. While the principles of adult remediation (Chapter IX) are equally important in any setting, the delivery of instruction varies according to the learning situation. In cases where AE teachers can work with students on an individual basis, the clinical model presented is highly appropriate. However, in situations such as AE skill labs, in which one teacher must serve a number of students at a given time, the clinical approach is not feasible. This issue was often brought forth; only partial, narrowly applicable solutions (e.g., tape recorders, trained volunteers) were formulated. The problem will remain an obstacle for AE teachers working with LD students, particularly at severe levels. An LD consultant model (mainstreaming) that is being implemented at Jefferson County Adult Education in FY 80-81 will hopefully offer a more workable framework to deal with higher than optimal teacher-student ratios.

Identification of the LD Learner

An extensive search for appropriate diagnostic tools was conducted by George Travis.[16] Mauser's Assessing the Learning Disabled: Selected Instruments (1976) and Buros Mental Measurements Yearbook, 7th Edition were carefully reviewed and cross listings were compared. Few instruments were located that could even be used appropriately with adults at low academic levels. Travis cited the greatest obstacle to reliable adult diagnostic procedures as a two-sided problem:

1). Educational tests typically are designed for and standardized on children. Persons trained in these tests (psychologist, LD diagnosticians, speech/language therapists) are oriented toward children.

2). Adult educators knowledgeable in adult learning are usually not trained in psychological testing.

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[16] George Travis, "An Adult Educator Views Learning Disabilities," Adult Literacy and Basic Education, Summer, 1979, pp. 85-92

Thus, the situation is not conducive to appropriate assessment of adults. Travis summarizes the current status:

> ...adult educators will find few, if any, instruments designed specifically for the identification of learning disabled adults, and which have found widespread use, value and acceptance in adult education programs.[17]

The best solutions for adult educators at this time appear to be the London Procedure or the Slingerland Screening Tests. Both of these screening instruments require special training for administration and scoring, although knowledge of test statistics is not necessary. These tools are screening and general assessment techniques; they cannot be used as precise diagnostic instruments. These two tests are briefly evaluated later in this section of the report.

The only comprehensive test battery now available for diagnosis of learning problems in adults is the Woodcock-Johnson Psycho-Educational Battery. This test which was used for this project is described in greater detail in Chapter VII. While the battery proved highly effective in the diagnosis of ALD, its use is generally not practical in an AE setting because of its length and complexity. However, the training of a few adult education teachers to serve a specified geographic area, or the use of special services diagnosticians from public schools who desire to broaden their experience to include adult diagnosis could be of great value to those students suspected of serious learning disabilities.

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[17] Ibid., p. 89.

Another viable alternative is the use of good diagnostic reading tests that include auditory discrimination functions, phonics surveys, etc. Since the majority of ALD experience reading problems, an examiner with knowledge of LD is able to gain much diagnostic information about the learning problem through the administration of comprehensive reading tests.

In the absence of any type of testing, careful observations of student behavior while engaged in various learning tasks can be helpful in assessing problems and in modifying components of the learning environmnet to benefit the student. An interesting and predictably useful procedure called Empirical Mapping has been developed as an informal assessment technique.[18] Empirical Mapping is a card-sort procedure that the student engages in to survey his preferred learning style. Information gained from the survey is then used to help tailor the learning environment to the particular student's needs.

The London Procedure was developed by Laura Weisel as a screening and diagnostic procedure to identify adult learning problems. Ms. Weisel's dual role as a learning disabilities specialist working with children in public schools and the Director of the London, Ohio ABE program provided the background for her special interest in ALD. Several federal grants (Adult Education Act, Section 309) sustained the development of this test from 1975-1977. The London Procedure measures five areas of functioning and contains 17 short subtests. It is an individually administered battery requiring approximately 45 minutes to complete. The test was standardized on over 100 adults with a 0-8 reading level enrolled in 9 ABE programs in Ohio.

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[18] LaVon Coate, 309 LD Project, Vincennes, Indiana, 197-

The strongest points of the battery in terms of reliability and utility are the Visual and Auditory Functions which measure sensory acuity. The Visual Functions consist of distance acuity, plus lens, near acuity and binocularity tests. The Auditory Functions section uses an audiometer with pure tone sweep frequency. These two screening tests are most appropriate in determining if the student should be referred for a complete visual or audiometric examination. Since many adults do not routinely have access to such checks, these two test areas are highly valuable in the initial screening process for learning problems. If difficulty is met in basic acuity functions, corrective devices can usually be prescribed. Of course, adults with correctable acuity problems may also have learning disabilities.

The Visual Perception section consists of a visual discrimination and closure task, a simple eye-hand coordination excerise and the drawing of geometric forms to assess visual motor integration. The Auditory Perception section includes listening to a short passage being read and then answering oral questions. Other tests are repeating a series of digits and repeating sentences, short-term auditory memory functions. No tasks of discriminating or sequencing speech sounds (usually considered a critical reading-related auditory function) are provided.

A strong criticism of these visual and auditory tests is that they are not designed for adults; they are simply drawn from various LD tests for children, e.g., Developmental Test of Visual-Motor Integration (Berry, Buktenica, 1967) and Detroit Tests of Learning Aptitudes (Baker, Leland, 1967). Certainly if an adult has difficulty with these tasks, one can conclude that processing problems may exist. However, the test cannot be considered an adult-designed assessment tool. The subtests clearly are not representative of tasks that adults face in their lives, either in educational or work settings.

The most strenuous professional objection to The London Procedure is in the last section of the test entitled "Dyslexia: Reading (Encoding and Decoding Diagnosis)." The student is asked to write the alphabet, the days of the week and the months of the year. Then a series of words are read orally and a list of words are spelled. (Again these tasks are subtests taken from other tests). The tasks themselves are reasonable and educationally focused, although the alphabet, months, etc. tend to rely on rote memory and are often overlearned; thus, the student may have memorized these items and perform adequately yet have significant problems. The term "dyslexia" is a medical term denoting a neurological dysfunction and should never be used as a descriptor for poor performance on simple word recognition and spelling activities by untrained persons.

The labeling of a person as dyslexic is a serious matter and can have grave consequences. The use of the term cannot be treated lightly. Overgeneralized use of such complex terms by teachers who do not understand the ramifications of labeling can have negative effects beyond the individual student, also. The danger of such broad usage is that when too many are so designated, the condition itself becomes viewed as less serious and less in need of amelioration.

An additional difficulty with the test is found on the profile (answer and interpretation) form. Scores for each subtest are categorized into either weaknesses or strengths; there is no provision for moderate or borderline performance.

The basic problem with The London Procedure, in this LD specialist's opinion, is that it tends to place a tool of too great authority in the hands of teachers who often lack the knowledge of LD to interpret the test scores for what they actually represent. Ms. Weisel herself commands a sophisticated knowledge of LD and its diagnosis, and has much expertise with adult learning problems. Her cautions in the test manual instructions are most appropriate:

> The assessment is not intended to yield a concrete scale or score on an adult's reading ability or disability. It is designed to show tendencies toward symbol confusion and disorientation. ...The examiner must be careful to distinguish between total illiteracy and an adult with a reading disability. Many persons have simply never learned the alphabet or the fundamentals of spelling.[19]

Ms. Weisel clearly states that The London Procedure was developed as a screening device; as such, the test design is adequate and represents a important step forward for adult educators' work with ALD. The danger evolves when the test becomes the authority and is used as a definitive diagnosis for learning disability, dyslexia, etc. Unfortunately, this position has been observed in a number of instances here in Colorado, and can be assumed to be true in other areas of the country as well.

The outcome of the use of The London Procedure to design an individualized educational plan (I.E.P.) based on identified strengths and weaknesses is theoretically sound. A useful discussion of remediation versus compensation strategies is provided.[20]

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[19] Laura Weisel, The London Procedure, Manual and Interpretation Guide, Field-Test Edition, 1977, p. 24.

[20] Ibid., p. 59-60.

For each subtest area, a list of both remediations and compensations are given. Remediations are keyed to specific materials which are also listed in the manual. These remediations represent a "cookbook approach" that characterized LD remediation for children a decade ago. Furthermore, a number of the activities listed are developmental and child-oriented; they should not be considered appropriate for adults. On the other hand, the compensations suggested are highly realistic and practical for the adult having learning difficulties in an educational setting. Most of the compensations are basic principles that deal with modications of instructional delivery or the learning environment.

In broader perspective, the development and dissemination of The London Procedure with its training workshops and the films produced by Indiana's ABE/LD-TV project has had a large-scale, positive impact on adult education programs throughout the nation. The project has done a great deal to publicize the needs of learning disabled and must be considered of tremendous value in this respect.

A screening procedure that appears highly appropriate is the Slingerland Screening tests.[21] While these tests were designed for large-scale use with children in public schools, their content is not childish; they are clearly appropriate for adults. Five forms or grade levels of the screening tests are available. The highest level, the Malcomesius, is known to be used in community and four-year colleges that are concerned with serving LD students. The second highest level, Form D, was the instrument chosen by the report author to be taught to AE teachers in Colorado's FY 79-80 teacher training project. (Chapter I, p. 25).

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[21] Beth H. Slingerland, Slingerland Screening Tests for Identifying Children with Specific Language Disability, Cambridge, Massachusetts: Educators Publishing Service, Inc., 1974.

A series of 8 subtests comprise the written screening test. The test measures relative strengths and weaknesses in visual, auditory and kinesthetic functioning through a format closely resembling common educational tasks at any age level. The subtests were skillfully devised to reveal deficit areas in various combinations (interactions) of basic process - discrimination, perception, memory, association and integration. Since all subtests are of practical nature, the design of the test is logical to ABE teachers, regardless of their level of knowledge of learning disabilities.

Adavantages of the Slingerland Screening Test include:

1). Inexpensive cost.

2). Relatively simple to administer.

3). Can be administered to groups - thus, utility as true screening device.

4). Local norms (i.e., no standardized scores) which can be adapted to fit any educational environment

5). No definitive standardized scoring that might yield erroneous (and possibly harmful) labeling of students.

6). Approximates actual classroom tasks better than any other screening or diagnostic test - thus, of high practical benefit.

7). Provides clear comparisons of students' modality and integration strengths and weaknesses.

8). Well-established, valid and reliable method to distinguish LD type errors from lack of instruction in written language.

9). Appropriate content for all ages and academic levels.

10). Lends itself quite well to identifying deficits areas that can be interpreted into specific corrective strategies.

The greatest problem with the Slingerland for AE teachers (and LD teachers, too) is the complexity of scoring and analysis. Rigorous, professional effort is needed to do detailed work with this instrument. However, the requirements set for these classes demanded far greater detail with the test than would normally be necessary for AE screening purposes. Those teachers who did thorough work with the scoring and analysis of the Slingerland reported increased understanding of the complexity of LD and greater appreciation of human information processing.

Screening of all ABE students during initial enrollment/ orientation periods would be relatively simple by administering the Slingerland Tests as a group test. Cursory comparative examination of students' performances would quickly differentiate those who simply hadn't received instruction and those who had some degree of learning problems, regardless of the grade level at which they were functioning. Then, more careful analysis of errors for those whose performance was characteristic of LD (reversals, transpositions, etc.), could be conducted. The Slingerland Tests, coupled with a diagnostic reading test, provide a practical, efficient method of gaining information about a student's learning problems that can be used to develop a remedial program.

Evolving Expertise

Efforts to establish awareness, to develop expertise and to provide appropriate services to adults with learning disabilities (ALD) have only evolved in any significant way since the mid-1970s. As stated in Chapter II, the problem of ALD has been approached in several ways by several different interest groups.

ACLD (Association for Children and Adults with Learning Disabilities) has done the best work in publicizing and networking for ALD. The greatest expertise in diagnosis and remediation appears to be emerging in small, clinical settings (private and university) scattered throughout the country. Unfortunately, no network of effective communication has yet developed to share and disseminate relevant knowledge. Major LD journals have not shown interest in ALD; they are focused on children in public schools. The issue of early identification and treatment of pre-schoolers has received far more attention (and funding) than the issue of ALD.

Another possible area of help for ALD that has not yet been developed lies in job training programs and employment. Very few, if any, large-scale efforts have been made by business and industry to identify and assist their employees with LD.

Special services for LD students have been developed by a sizeable number of public colleges and universities to meet legal provisions of P.L. 93-112, Section 504 dealing with the rights of handicapped citizens. Information on such programs (from national and regional presentations, articles and project data) generally indicates that the special services available to the LD learner in higher education settings are purely compensatory (readers, oral testing, tape recorders, etc.) or are tutorial (basic skills development). Only a few programs demonstrate evidence of true remedial or therapeutic treatment.

Securing funding for effective treatment is one of the major problems facing ALD. Long-term, individual work with a specialist is costly. However, sizeable public expenditures are allocated for all other types of handicaps. ALD are certainly no less deserving simply because their handicaps are less obvious. The federal agency primarily responsible for helping the handicapped secure training for gainful employment is Vocational Rehabilitation.

While some counselors in a few local rehabilitation offices in certain parts of the county are aware of ALD and seek help for them, the total situation is not positive. California appears to be making the greatest efforts currently to gear up for ALD.

The most extensive grassroots efforts to serve ALD have been made by Adult Basic Education (ABE). Much groundwork was laid by Dale Jordan, Ph.D., of the Jordan-Adams Learning Center in Oklahoma. His workshops around the country in the 1970' aroused interest and presented much useful information on adult learning problems.

A number of projects dealing with ALD within adult education have been carried out across the country in the past 5 years. Monies from section 309 of the Adult Education Act of 1965 have been utilized in the development of many of these LD projects.

A centrally-organized workshop on Adult Learning Disabilities was conducted in Illinois in 1975. A handbook for aides working with ALD was developed at Morehead State University in this year also. An early 309 project (1975) conducted in Iowa by Susan Bury for staff development was targeted for institutionalized adults with learning problems as well as general ABE programs. A second project by Susan Bury and staff at Upper Iowa University continued this teacher training development with an emphasis on reading problems. The scope of the-in-service project included diagnosis, materials development, learning techniques and individual prescriptive programming. An article appearing in Community College Review (Summer, 1976) by Glass and Conrad examines contributing factors in the LD condition among ABE students, and suggests eight points of learning adaptation.

An interesting project "Recruitment and Training of Professionals to Work with Adults with Specific Learning Disabilities so that They Might Become Employable or Promotable" was developed at Johns Hopkins University (FY '75-'76). This program was highly pragmatic in two respects: 1) teachers (reading specialists) and counselors were trained in learning problems as student participants received services; and 2) reading skills improvement and life adjustment were directly related to employment. A drastic departure from 309 ABE projects that serve already enrolled ABE students, this group had to independently recruit clients and then attempt to maintain them in the program. Referrals to the program were made by agencies including adult education centers, community colleges, Vocational Rehabilitation, Manpower and Corrections. Careful screening was done to determine eligibility for the program based on criteria reflecting normal intellectual, severe reading problems, general emotional stability, etc. The combination of remedial reading and personal counselling appeared to provide an effective program. Follow-up of clients six months after program completion was carried out as the final phase of this comprehensive project for ALD.

A set of 5 instructional videotapes on various aspects of ALD featuring Dale Jordan and others is available through Ohio State University. Helpful, reproduceable hand-out information accompanies the tapes. While all of the tapes are useful, the tape on visual functions is particularly important as many ALD have visual problems and most educators lack background in how deviant visual processing affects reading. The Jordan Vision Screening Test (JVST) of Binocular Control for Sustained Reading and Handwriti is a behavioral checklist covering four areas of visual functioning: Convergence at Near Point, Target Pursuit at Near Point, Saccadic Control in Oral Reading and Convergence Control in Handwriting. This screening tool can be easily administered by teachers and is helpful in determining general vision problems as occur in the learning environment. The JVST was used in part in this project.

The development of The London Procedure and ABE/LD-TV[22] project (mentioned in the preceding sections) represent the most substantial work done within ABE for adults with learning problems. One of the major products of ABE/LD-TV is a series of three high-quality color films, "The Learning Disabled Adult." These films contain biographical sketches of several ALD poignantly revealing some of the life, educational and employment difficulties of these individuals. The administration of The London Procedure to one of these persons is also the content of one film. The film series are highly recommended to introduce adult learning problems to ABE and other community groups.

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[22] Michael S. Parer, Project Director, ABE/LD-TV, a 309 Adult Education Demonstration Project, Indiana Dept. of Public Instruction Dir. of Adult and Community Ed., Channels, Inc., Indianapolis, IN., 1978.

Other recent ABE projects include a teacher handbook on ALD developed at William Rainey Harper College (1978) and work with Cognitive Style Mapping in 3 states: New York, Illinois and Indiana. An entire reading program was developed by LaVon Coate and others based on the integration of empirical mapping concepts with learning disabilities.[23] This detailed program focuses on both teacher-training and actual remedial instructional material for adults at 0-6 reading levels.

Two related LD projects were completed in New Jersey in 1978 by Grace Ingham and others. A systematic approach to assessment and instruction with 5 basic components was devised and then carried out with ABE students. Strategies for modified instructional delivery are offered. In addition to two recurring needs stated in 309 ABE project evaluations, development of appropriate adult assessment instruments and greater instructor compentencies, Ms. Ingham proposed the establishment of a national master plan and state plans to guide the development of services for exceptional adult learners.[24]

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[23] LaVon Coate, el.al., "Final Report of a Reading Program for ABE Students: Level I Teacher Training Materials, Vincennes University, Vincennes, IN, 1978.

The National Association of Public and Continuing Adult Education (NAPCAE) organized a special Committee on Adults with Exceptional Learning Problems in 1976 to develop awareness on a national level that would result in more favorable legislation and funding to promote increased services for ALD. This committee appears to have been instrumental in working toward these crucial goals, particularly in several regions of the country. Currently the Committee has submitted a petition to the U.S. Office of Education to officially recognize adults with learning problems as a "Special Population in Need of Assistance."[25] If the plan is accepted a major step will have been taken in the systematic development of services for ALD.

The advent of Adult Learning Problem Notes, a newsletter first published in January, 1980, by the NAPCAE Committee on Adults with Exceptional Learning Problems marks an important effort to coordinate resources for the benefit of ALD on a national level. The purpose of the newsletter is stated:

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[24] Grace Ingham, el.al.,"Final Report: Educational Assessment and Instructional Strategies for Adult Exceptional Learners." ERIC Documents, ED 167724, Resources in Education, Aug., 1979.

[25] George Travis, "A View from the Top," Adult Learning Problem Notes, January, 1980, p.5.

> ...to establish a communications network among those adult educators who share common interests and conerns. These concerns include the identification of resource persons who can serve as staff development presenters, identification of materials and techniques useful with adults who have exceptional learning problems, increased visability of and concern for the area of adults with exceptional learning problems, and the opportunity to influence future decisions and policy making, and legislation.[26]

Certainly Adult Education is creating substantive inroads in the tremendous task of developing appropriate services for its learning disabled students. The projects mentioned and reviewed here[27] cannot be considered a complete survey: information of developments after 1978 beyond the state of Colorado was not available to the report author.

Other recent and current ABE projects for students with learning problems in Colorado include:

1). A 309 special project (FY 79-80) emphasizing a clinical model of student services of assessment and remediation directed by Palerie Mann, Greeley, Colorado.

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[26] Ibid., Newsletter edited by Phillip Prey, Ph.D., OAS Dept., Marshall Univ., Huntington, WV 25701.

[27] Primary sources of review material were: 1) An ERIC Document computer search list of abstracts and several complete documents, (many thanks to Ray Clarke, Ph.D., of the Univ. of Wyoming for providing the information); and 2) Adult Learning Problem Notes, January, 1980.

2). An intensive teacher-training project delivered in three areas of the state FY 79-80 designed and taught by Paula Pattschull for the Colorado Adult Education Resource Center (Kathleen Vonderhaar, Director) and Colorado State University.

3). A 309 demonstration project (FY 80-81) in mainstreaming the exceptional learner in regular ABE programs at Jefferson County Adult Education, directed by Barbara Grochowski and Kathryn Le Veck.

It is evident that many secondary public schools are now providing special help for the LD learner. Does this imply that adult educators eventually will no longer be faced with students possessing serious learning problems? The answer must be resoundly "no" from any realistic perspective.

It has been documented in Chapter II that learning disabilities are a lifelong handicap, particularly for the severely involved. Better and earlier remediation of children should have a long-term effect on entry levels of ABE students; fewer total non-readers and generally stronger skills should be observed. However, a large proportion of low level students with the same kind of processing problems will continue to enroll in ABE programs, it is predicted. While learning problems will be treated more effectively at all educational levels, society's literacy standards will also tend to increase. Thus, it is felt that nearly as many individuals will have problems with basic skills in the future.

Another factor that may place greater demands on Adult Education to serve the exceptional learner will be the students themselves. Having already been identified as LD and having received special assistance as a child and/or adolescent, the student will be more knowledgeable about his/her problems and will expect others to be, also.

There always are (and will continue to be) those students who, for one reason or another, simply don't get help in school. Many more will receive help, but it will be too little, too late, too inconsistent or too inappropriate to be effective.

The interface of these factors will contribute to continued high proportions of exceptional learners in ABE. Therefore, it seems critical that adult educators pursue the development of teaching and program competencies to better meet special learner needs.

The following chapter, "Status of Special Services in Schools for Learning Disabled Adolescents," was included in this report to provide a brief background for adult educators on what to expect from young adult students with learning difficulties in the near future.

CHAPTER IV

STATUS OF SPECIAL SERVICES IN SCHOOLS FOR LEARNING DISABLED ADOLESCENTS

Emerging Concerns

The field of learning disabilities as it has developed in this country in the past 20 years, and proliferated in the last 10, has concentrated its efforts across many disciplines on the young learner - preschool and elementary-aged. The disturbing fact that early intervention often does not remedy LD, coupled with the advent of the publication of the final regulations of P.L. 94-142 in late 1977 mandating free appropriate education for the handicapped, ages 3-21, has placed direct responsibility on secondary schools. In most cases this responsibility found schools unprepared to serve the LD adolescent. The state of affairs with secondary level LD will be dealt with here for 3 reasons.

1). Today's secondary LD students will soon become LD adults.

2). Solid and successful treatment approaches with LD adolescents have far greater applicability to LD adults than do programs designed for young children.

3). Persons involved with human services need to understand the background from which the young LD adult emerges. Furthermore, the young LD adult who has been identified as LD and has received special services in school will likely be more assertive in seeking assistance as an adult than the present ALD who lack understanding of their problem.

The concerns of the secondary LD students are certainly visible among professionals. An entire issue of the Learning Disability Quarterly (the major publication of the Division for Children with Learning Disabilities, the national professional organization for LD which is a division of the Council for Exceptional Children) was devoted to the LD adolescent in the fall of 1978. A typical statement about secondary programs:

> ...Although opinions abound, little consensus exists as to what components are desireable in a program for secondary learning disabled students. Thus existing secondary programs are often characterized by unverifiable results, inappropriate instructional and management procedures, and widely differing focuses.[28]

These particular problems can be delineated as

> ...Learning disabilities specialists vary markedly in their beliefs regarding: (1) the amount of emphasis

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[28] S.W. Touzel, "Secondary LD Curricula - A proposed Framework", Learning Disabilities Quarterly, vol. 1 no. 4, 1978, p. 53.

> that should be given to remedial, career/vocational, or compensatory programs; (2) the role of sociocultural, biophysical, psychoanalytic, phenomenological, behavioral, or cognitive factors in learning; and (3) the type of curricula focus, i.e., basic academics, advanced academics, functional living skills, affective education, etc.[29]

Unfortunately the BEH (Bureau for the Educationally Handicapped) final regulations do not offer much guidance in these debatable areas.

> Examination of the regulations reveals no differentiation between elementary - and secondary-age students even though we know that much more than age separates the primary - and secondary - school student. For example, social and cognitive differences as well as programmatic and organizational differences between the school structures argue for differentiation in evaluative procedures.[30]

School organization and curriculum orientation level play major roles in the delivery of LD services. Elementary schools by-and-large are child-oriented, dealing with the child and his education from a developmental perspective. On the other hand, secondary schools are generally content-oriented, with much of that content today being seriously question as boring and irrelevant to students lives.[31] An impasse in the delivery system of special services frequently cited by LD lab teachers is the attitude of content-oriented secondary classroom teachers who are trained in subject matter and not in development and learning difficulties of adolescents.

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[29] J.L. Weiderholt, "Educating the Learning Disabled Adolescent: Some Assumptions." Learning Disabilities Quarterly, vol. 1, no. 4, 1978 p. 11. J.L. Weiderholt and G. McNutt, "Assessment and Instructional Planning: A Conceptual Framework." In D. Cullinan and M.H. Epstein (Eds.), Special Education for Adolescents: Issues and Perspectives. Columbus, Ohio: Merrill, 1979.

[30] L. Goodman and M. Price, "BEH Final Regulations for Learning Disabilities; Implications for the Secondary School." Learning Disabilities Quarterly, vol. 1, no. 4, 1978, p. 78.

Academic Deficiencies among LD Adolescents

In 1974 the most frequently cited problem was reading.[32] Since that time, efforts have been made to assess and improve reading skills. A review of research of learning disabilities and reading disorders published in the summer of 1979 reported that reading problems are highly prevalent among LD adolescents. This article identified comprehension problems as the area of greatest deficiency for the majority of students. A review of textbooks substantiated what many students and LD teachers are well aware of: texts at secondary levels are often far more difficult than they need to be to convey the relevant body of information. This problem not only appears to surface in academic content areas (e.g., history, economics), but also in more consumer oriented classes (e.g., home economics, consumer math) and in vocational and technical training programs.[33]

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[31] Paul Goodman, Robert Bundy, John Goodlad, Peter Schrag, Ivan Illich, Carl Bereiter, John Holt and many others.

[32] S.A. Kirk and J. Elkins, "Characteristics of Children in Resource Rooms." From Leadership Training Institute in Learning Disabilities, Tucson, Arizona, 1974.

Our formal education institutions over the years seem to have become entrenched in the belief that complexity yields a high-quality learning product despite growing evidence that a sizeable body of the student population neither is equipped nor desires to struggle through such written material. Students with LD generally are not able to deal with such complicated written material even if they so desire. At the high school level in particular the picture is dismal.

> Many factors within the high schools promote reading problems for their learning disabled students. The major factors include the emphasis on literal comprehension, inadequate instructional printed material, poor diagnostic and instructional techniques, negative variables associated with teaching reading at the secondary level, and the lack of comprehensive planning.[34]

Written Expression Deficiencies

One of the most obvious skill deficiencies among all ages of LD individuals is written expression. General factors account for this observation that is commonly recognized by teachers who work with the learning disabled. First of all, language can be regarded as the primary mode of thinking and communicating in humans. Developmentally, language skills are hierarchical, proceeding from oral language to reading (deriving meaning from printed symbols) to writing (expressing meaning through printed symbols). Thus, written language is considered the most complex form of language. Secondly, in terms of psychoneurological processing, written language requires the highest level of integrative functioning between visual, auditory and kinesthetic modalities.

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[33] J.D. Lindsey and M.A. Kerlin,. "Learning Disabilities and Reading Disorder: A brief Review of the Secondary Literature". Journal of Learning Disabilities, vol. 12, no. 6, p. 408-414.

[34] Ibid., p. 414

The goal of written language could be stated as communicating thoughts clearly, logically and creatively. However, very few ALD become proficient writers; they can't successfully negotiate one or more of the various components of writing. These components include formation of letters and words into meaningful units, legible handwriting, adequate mechanics (spelling, punctuation, capitalization), and acceptable syntactic, morphological and semantic structures. In less severe cases of LD where an individual appears to have adequately acquired most basic skills, a writing sample will frequently reveal error-types indicative of LD. In severe cases of LD, the development of functional writing skills often does not even constitute a realistic goal.

At secondary levels the core of instruction is measured through written language products. Thus, the LD adolescent is typically at a serious disadvantage, and is often unable to demonstrate his knowledge of a subject. Unable to cope with this frustration, the LD adolescent frequently adopts a variety of avoidance strategies when faced with written assignments. Such techniques may include elaborate excuses, bribing other students, pleasing the teacher in other ways, selecting classes requiring little writing, developing oral abilities, manipulating teachers, and direct refusal.[35]

Spelling is usually the most frequent presenting problem cited by LD adolescents and adults. Spelling errors resulting from processing problems show patterns or error characteristics that are distinctly different than just "poor" spelling skills due to lack of instruction. A common complaint of LD adolescents is that while teachers expect reports with well-organized paragraphs, topic sentences and summaries, the student spends most of his energy trying to figure out the spelling of the words and/or choosing simpler words that he does know how to spell.[36] Thus, the ideational quality and the quantity of written work is drastically diminished. It is unfortunate for the LD adolescent that schools place primary emphasis on handwriting and mechanics at the expense of quality of ideas (the essence of written expression). There is no indication that this emphasis might be shifted to allow the LD student a chance to function acceptably with written assignments. In sum, there appears to be tremendous discrepancy between school expectancies and realistic performance in written work by students with learning disabilities.

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[35] D. Stonebraker and M. Stremel. "Growing up with a Learning Disability." From a series of videotapes on ALD written by P. Pattschull, Jefferson County Schools, Lakewood, Colorado, 1980.

[36] Ibid.

The great amount of frustration experienced in secondary schools with written language deficiencies often create a total avoidance of writing by ALD in their daily lives. From a purely functional viewpoint, it is less important to write than it is to read.

Special Services Offered in Secondary Schools.

The results of a national survey of approximately 100 fully operational secondary LD programs were reported in March of 1979. Five distinct program models were found. Brief descriptions of these program types and the percentage of each type of the total survey participants are listed.

1). Functional Curriculum Approach (17%)
The model offers an alternative to basic curriculum, providing consumer information, employment strategies and general life-coping "survival" skills. Most of these programs are delivered in self-contained classrooms for LD students.

2). Basic Skills Remediation Approach (45%)
This model is clearly an extension of elementary programs with an emphasis on

improving reading, writing and math skills. These programs are carried out in resource room (lab) settings.

3). Tutorial Approach (24%)
This model's goal is to help students negotiate their assignments in their regular classes. A resource room serving small groups at a given time is the typical situation.

4). Work-Study Approach (5%)
Programs of this variety usually offer half-day on-the-job training and half-day classroom instruction relating to employment.

5). Learning Strategies (4%)
This approach emphasizes helping students develop learning strategies ("learning how to learn") that can be applied to basic skills development, regular classroom demands, and survival skills. Resource rooms are the setting.[37]

A follow-up to this survey revealed that LD teachers estimated that of all LD adolescents, 11% could be classified as severely involved and 89% could be considered mildly or moderately involved. It was also felt that severe cases could be best served by functional or work-study programs. The key to success for the mild and moderate LD student was cooperation between regular classroom teachers and LD resource teachers in planning instruction for the student.

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[37] D.D. Deshler, N. Lowrey and G.R. Alley. "Programing Alternatives for LD adolescents: A Nationwide Survey, Academic Therapy, vol. 14, no. 4, p. 391-396.

Possibilities for the Future

Much recent information on the adolescent with LD (e.g., parental reports, ACLD publications, professional literature) is focusing on the need for vocational training as the major component in the development of functional life skills. Traditionally schools have offered work study programs for the mentally retarded. The extension of such programs as they currently exist for the LD population would be a serious mistake in the opinion of this author. While work study programs would provide schools with a simple programmatic solution, the needs of the LD students would not be addressed or met with any degree of satisfaction.

The majority of the LD population has aspirations and capabilities well beyond dishwasher, food service worker, etc. In fact, many individuals with LD are able to function at higher job levels (involving reasoning, creativity and decision-making) with greater competence than they are at jobs requiring rote and repetitious patterns (filing, typing copy, machinery operation, etc.). This phenomenon can be stated as a generalization based on experience, observation and interviews with ALD. For example, an adult with LD may have compensated for deficits in such a way that many high level reasoning or verbal or communication skills have been well developed, yet many low level problems with perception or memory still exist. Thus, the vocational needs of

LD adolescents are generally very different than those for students with below average intellectual capacity. To equate those two groups of special learners in terms of vocational programming would be a grave disservice to the LD adolescent.

No published information on successful vocational programs tailored to LD populations is known to exist at this time. One interesting possibility suggested by Wiederholt is the Adult Performance Level (APL) Program.[38] This program was designed as an alternative curriculum for adult education high school completion programs. The goal of the program is to help students gain functional competency in areas considered to be highly relevant; e.g., consumer economics, community resources, government and law. In this program model, basic academic skills as well as problem solving, interpersonal communication, etc. are necessary to acquire the functional competencies.[39] Thus, the interface of academic tools and relevant life skills curricula provides a comprehensive program for the student.

The APL Program is presently being adapted and used in various educational programs (Ad. Ed., community colleges, community centers) in all areas of the country. It is felt that with program modification, APL curricula provides a sound basis of instruction for LD students. A Denver Metro Area A.E. Center reports 20 LD students enrolled in their APL program, with several hundred additional students using APL materials.[40]

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[38] J.L. Wiederholt, "Educating the Learning Disabled Adolescent: Some Assumptions." Learning Disability Quarterly, vol. 1, no. 4, p. 17-18.

[39] B. Grochowski, Life Skills Specialist, APL Director, Jefferson County Adult High School, Colorado, 1980.

If the Adult Performance Level Program is currently successful with young adults with LD, it follows that the program (similar programs) could provide viable frameworks for LD adolescents in secondary schools.

The future possibilities for good secondary LD programs do appear encouraging from a long-range perspective. However, it will take a number of years for these programs to get geared-up to be fully operational and validated as effective educational procedures. The current dismal state of affairs for the LD adolescent is poignantly stated by Cruickshank.

> With few exceptions we apply small educational band-aids to the learning disabled adolescent. We make some attempt (often the same for years) at remediation of academic skills; have them sit through regular college preparation classes; offer little or no vocational counseling or training; and then wonder why such a disproportionate number of adjudicated youth with "normal" intelligence are reported to have learning disabilities. The fact is that many are equipped for nothing; they cannot read and cannot fill out a

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[40] Ibid.

> job application; most cannot gain entrance to or compete in college; some cannot manage their lives or even organize themselves to seek assistance. They do not understand their own differences and they have no applicable vocational skills.[41]

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[41] W.M. Cruickshank, W.C. Morse and J.S. Johns, . Learning Disabilities: The Struggle from Adolescence toward Adulthood. Syracuse, New York: Syracuse University Press, 1980, p. 195.

CHAPTER V

PREVALANCE AND CLASSIFICATION

The Question of Incidence

A variety of estimates of the prevalence of children with LD have been made, ranging from 1 percent to 30 percent of a given school population, depending upon the criteria used to determine LD.[42] Public Law 94-142 originally set a 2% limit (one sixth of the 12% of handicapped children aged 5-17) on the number of children who could be identified as LD for funding purposes. However, the 1977 federal regulations removed the 2% limit. Most authorities in the field of LD today claim incidence at 1-5%, with 7-8% the highest acceptable limit. When 15-30% of the population is considered LD, the seriousness of the condition is diminished and efforts to provide services to the truly "hard-core" handicapped are undermined. On the basis of traditional funding patterns for special education and related services for the handicapped, it is preposterous to imagine that legislation at any level of government would provide funding for special services for a third of the population. In sum, the prevalence of LD among school-aged children is debatable.

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[42] J. W. Lerner, Children with Learning Disabilities. (2nd Ed.), Boston: Houghton Mifflin, 1976, p. 11.

Given this background, it is not surprising that it is unknown how many adults have LD. No research has been published on the problem; it is doubtful that any has even been conducted. Therefore it seems a reasonable assumption that there would be approximately the same percentage of adults with LD in the general population as there are children with LD. Using the figures from the National Advisory Committee on the Handicapped[43] and data from the 1970 census, the following estimates of the number of learning disabled adults (18-64) in the U.S. were made:

At 2% incidence, 2.6 million;
At 5% incidence, 6.6 million;
At 10% incidence, 13.3 million.

A needs assessment conducted by the Kulick Foundation for a grant proposal stated that there are over 75,000 adults in the Denver area with specific learning disabilities (at 7% incidence). Adding another 20% who have mild learning problems, the total reaches close to 300,000. These figures were based on a 1,074,323 estimate of 15-64 year-olds in the Denver Metropolitan Area (seven-county regional area).[44]

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[43] National Advisory Committee on Handicapped Children. Special Education for Handicapped Children, First Annual Report. U.S. Office of Education, 1968.

Estimates of the prevalence of LD among Adult Basic Education students given by experts in three areas of the country were cited in the introduction and in ChapterIIIas 60-75%. An additional survey of the number of LD students currently enrolled at one large metropolitan adult education center is offered by an experienced LD teacher who works at the center. Of approximately 400 total students, about 52% show valid indicators of specific learning disabilities.[45] These large percentages do appear credible in the context of this project.

How can over half of a given adult population have learning disabilities when the incidence in the general populace is relatively small? Three issues need to be addressed to reconcile this discrepancy:

1). Characteristics of the ABE population

2). Identification of LD in adults

3). Specification and severity of LD condition

As discussed in Chapter III, adult education attracts persons who have not been able to attain a satisfactory educational level in public schools with learning problems cited as a major factor for many. Style of educational program, cost, scheduling, etc. generally favor this type of learner population. Thus, the characteristics of ABE students as a group reflect a disproportionately large incidence of learning difficulties.

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[44] Hollybeth Kulick, The Kulick Foundation for the Learning Disabled, Newsletter: Sun is in the Rainbow, 1 Oct., 1980, p. 4.

[45] Barbara Grochowski, Director, Adult Performance Level Program. Jefferson County Adult High School. Wheat Ridge, CO. 1980.

How are learning disabilities identified in adult populations? The same problems that beset the LD profession dealing with school children (i.e., identification procedures, cut-of points, degree of severity) exist with adults, but in far greater magnitidue. Reasons for difficulty identifying the LD adult discussed also in Chapter III are multiple:

1). Appropriate diagnostic tests with adult norms are rare.

2). Trained diagnosticians are generally unavailable (primarily due to lack of funds).

3). Adults are not a "captive audience" (such as school children) which facilitates large-scale screening and interdisciplinary testing.

4). Theoretical constructs of LD (developmentally oriented) are not readily applicable to the individual at maturity.

5). Few LD specialists are experienced in working with adults.

6). Adult education teachers with few exceptions are not trained in learning disabilities.

These same problems with identification also help explain the lack of appropriate educational treatment plans for adults. Therefore, unless/until a clinical model or a school model of LD can be adapted to and then approximated within Adult Education, the actual incidence of LD adult students will remain highly speculative.

The questions of "which ones" and "how many" being undocumentable, alternative measures of practical nature must be developed. Several methods of classification are proposed in this report to offer clarity to a confusing situation. A simple categorical system based on functional severity is presented here.

A Proposed Resolution

An academic functioning level classification developed by the report author for rehabilitation counselors and adult educators is found in Table 11. The observable LD behaviors are grossly oversimplified, not intending to provide comprehensive delineation. However, the chart does offer a realistic starting point for educational appraisal and remediation. Based on extensive personal and clinical experience with ALD, the following estimates of prevalence (among the general adult population) at each level of severity are set forth:

Severe - 2%

Moderate - 5%

Mild - 12%

By combining these percentages, there are 7% with severely and moderately involved LD conditions. These persons greatly need

Table 11

CLASSIFICATION OF LEARNING DISABILITIES ACCORDING TO SEVERITY OF EDUCATIONAL DEFICIT

	SEVERE	MODERATE	MILD
READING LEVEL	very low; non-reader or 1st-2nd	3rd-7th with some sign of perceptual confusion	5th-12th; comprehension often low; may have slow rate
SPELLING, WRITING	extremely poor; bizarre errors; reversals, confusions	usually poor; reversals and letters of syllables; syntax problems with sentences	elementary level but few reversals; written expression very simplistic or complex and inaccurate
LANGUAGE	difficulty with word endings, syllabication, accent; often depressed level of usage but may understand higher levels; may exhibit symptoms of aphasia	same type of problems but less severe; often high vocabulary level with frequent mispronounciations; poorly developed monitoring system	can usually correct problem with some instruction in self-monitoring
PERCEPTUAL FACTORS	usually can't discriminate medial vowel sounds or sequence sounds and letters; frequent inversions, reversals or transposed	same but less severe; problems with medial sounds in words; can't readily distinguish syllables in words	may be easily distracted finds concentration difficult; occasional reversals
POSSIBLE DIAGNOSIS	dyslexia-may be most severe type alexia; signs of aphasia and/or dypraxia	moderate dyslexia or assorted problems at various levels of LD	residual perceptual problems but can't be definitively diagnosed as LD

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and deserve special assistance to help them partially overcome and adjust to their learning disabilities. It is conjectured that more than half of these persons could be considered handicapped according to the definition discussed in Chapter III.

The 12% considered mild are less seriously disadvantaged in an educational setting, although learning often involves real struggles. These individuals usually need special help, depending on their circumstances. The help they do receive can be far less intensive and of shorter duration than those possessing more severe LD.

At this point, another speculation on "how many" is given. If 19% as total LD is accepted, then most likely the highest estimate of LD among ABE students, 75%, would be warranted. On the other hand, if only severe and moderate cases (7%) constitute the LD population, then approximately one-third of AE students are learning disabled.

Two obvious shortcomings of classification of LD by educational level are attributability and gross imprecision in assignment of absolute severity of deficit. The use of a classification system such as that presented in Table 9 can be misleading if one does not carefully distinguish between lack of opportunity and actual processing deficit. For example, a learner may appear to have problems with underlying reading skills when he simply hasn't had enough solid instruction to master a particular skill. Differentiating between lack of educational opportunity and learning disability can be particularly difficult with E.S.L. (English as a Second Language) students.

Imprecision in regarding or assigning a person to a severe, moderate or mild level of involvement can best be demonstrated through example. An individual may have a severe internal deficit but yet have managed to master reading and other language skills through a combination of high intelligence, self-instruction and elaborate cue systems. (Or of course, the individual might also have received appropriate help in the course of his/her development). Thus, the person would appear as "mild" in this classification system, yet would be severely learning disabled in absolute terms. A case in point would be Bernita who appeared in The London Procedure films. Observation of behaviors clearly reveals the presence of severe learning disability; yet this woman, in most respects, functions at a high and successful level in educated society.

A final caution in the applicability of the chart is that it designates educational level on the basis of language functioning. The small percentage of LD that manifests itself in non-language areas (e.g. dycalculia - inability to deal with mathematical symbols) cannot appropriately be considered using this table.

Keeping these factors in mind, the classification of severe, moderate and mild can be helpful in determining prevalence of LD in a given population and in individual assessment and program planning.

A survey of the 25 persons served by this project according to the classification of severe, moderate and mild (as presented in Table 9) is set forth in Table 12 with project program assignments. Recall that Plan A was return to ABE with recommendations and no work with LD specialist; Plan B was work with an LD specialist while continuing in ABE; Plan C was special LD work only.

Examination of Table 10 shows that more severe cases were generally assigned to Plan C for more intensive help. It was found that it was far more difficult for those individuals who were illiterate to function within an ABE program than for those with low, but minimal reading skills. This was true regardless of the absolute severity of the LD condition.

The issue of absolute versus functional deficit can be exemplified in the case of a young man who was referred to the project with approximately a 3rd grade reading level, classified as "moderate" and assigned to Plan B. With the help he received in the project (and a lot of personal effort) he was able to make nearly 2 years gain in reading in about a 6 month period. At the projects completion this person was referred to Vocational

Table 12

Severity Level of Language-Based Deficit and Program Assignment

Severity of LD Based on Educational Level

Project Progam Assignment		Severe	Moderate	Mild	Totals
	A	2	0	3	5
	B	2	5	4	11
	C	7	1	0	8
	Totals	11	6	7	24

Rahabilitation to secure help for job training and further educational therapy. The physician (apparently overlooking the educational progress report) diagnosed this young man's neurological dysfunction as too severe to ever attain functional literacy skills.

Questions might arise concerning the 4 individuals classified as "mild," yet assigned to Plan B. Three of these persons were teenagers who really needed the support and confidence-building that the individual counselling aspects of this project could provide, in addition to developing more effective learning strategies. The 4th person in this category had a learning disability in the math area with high level reading skills.

The assignment of the 2 individuals designated as "severe" to Plan A appears inconsistent. However, while they definitely had serious learning problems, their primary handicap was not learning disability. (One had significantly limited intellectual capacity; the other had serious emotional difficulties). While these 2 people could probably have benefited from individual educational therapy, their prognoses for measureable improvement were poorer than for others (based on assessment) referred to the project. Realistic limitations of the project had to necessitate arbitrary cut-off points.

The Primary Handicapping Condition

The term "learning disability" in its current broad use must be understood as a generic term. Within the term "learning disability" many interrelated subcategories are subsumed; e.g., dyslexia, aphasia, minimal brain dysfunction. Popular usage of LD also frequently includes those learning problems attributable to environmental causes as well as to those problems originating in the central nervous system.

A statement of clarification of the terms "specific learning disabilities" and "learning problems" was given in the introduction of this report. Special education services for children with learning difficulties in public schools are clearly differentiated in terms of categorical needs. Much time and money is spent to assess the problem so the child can be labeled "correctly," placed in the "right" category of special learners and then receive the "appropriate" services to meet his needs. Politically-motivated funding patterns dominate regardless of how poorly human learning problems conform to arbitrary categories. (Recent trends toward noncategorical special education are changing these patterns, and may ultimately prove devastating for the LD child as presently defined).

One highly obvious problem of strict categorization of atypical learners is that some individua[illegible] simply don't fit any available category; thus, they don't receive any special help. A particularly common case of "falling between the (categorical) cracks" is the child whose intelligence is just below normal range (borderline mentally retarded or "S.L.I.C. - significantly limited intellectual capacity") who also has learning disabilities. These many students aren't accepted into LD programs because their I.Q. isn't quite high enough; yet they don't learn effectively with traditional learning methods for the retarded. The controversy of intelligence and learning disabilities is taken up vehemently by Cruickshank, Morse and Johns:

> The cut-off point of an IQ of 80..., of 85..., or of 90... has constituted not only misunderstanding of the problem per se, but an actual denial of services to thousands of children who present the multiple problem of learning disabilities and mental retardation. The reality of this situation cannot further be denied or tolerated, since it not only results in a lack of services to many children and young people, but also results in a form of discrimination which is blatantly illegal. Furthermore, it denies credit to the very children who loaned themselves to research and from whose efforts the early beginnings of an understanding of this problem of learning disabilities was formed.[46]

Fortunately these hairline distinctions are not perpetuated by adult educators working with exceptional learners. ABE teachers do not have categorical choices; they simply do the best they can regardless of their students' types of problems. Most importantly, within a fairly broad range of problems, it is irrelevant what the problem is called. The crucial element lies in the effective planning and educational programing for the individual learner. Thus, the preference for the term "learning problems" in ABE settings is reinforced by the report author.

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[46] William M. Cruickshank, William C. Morse, and Jeannie S. Johns, Learning Disabilities: The Struggle from Adolescence toward Adulthood. (Syracuse, New York: Syracuse Univ. Press, 1980), p. 7.

However, it is important that the adult educator understands that learning disabilities do exist at all levels of intelligence, from retarded to gifted. Furthermore the teaching techniques used do vary with both intellectual and processing capabilities. For example, a student with below average intelligence might do best with multisensory drill work while a student with above average intelligence might need a high level cognitive systems approach for most effective learning. One additional example is offered for clarification: It is generally easier for a mildly to moderately retarded student without LD to acquire functional reading skills through traditional methodology than it is for a student with above average intelligence and severe LD to attain the same skills with expert LD help.

Regardless of the lack of necessity or propriety of labeling within ABE, some background of the complexity and interaction of various learning problems should prove helpful. One of the best and most clear visual representations of the interfacing of learning problems has been developed by Cruickshank.[47] The model has been taken directly from the reference cited above and reproduced in this report, Figure 3. There is no doubt that this

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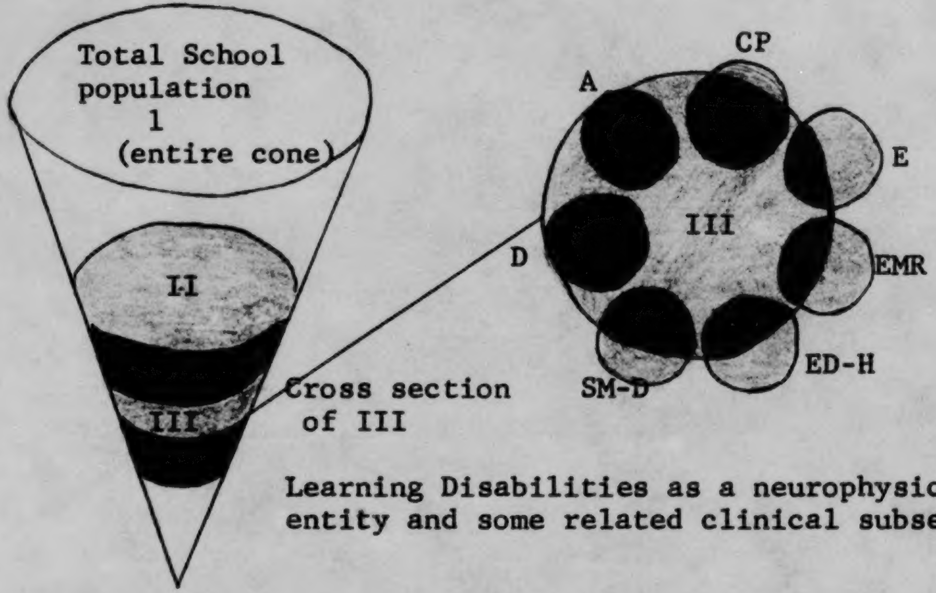
[47] Ibid., p. 8.

Figure 3

Relationship of learning impaired children to the general school population

Schema illustrating theoretical relationships among total school population, learning impaired populations, and selected subsets of the specific learning disability group.


Total School population
1
(entire cone)
II
III
Cross section of III
CP
A
E
III
D
EMR
ED-H
SM-D

Learning Disabilities as a neurophysical entity and some related clinical subsets

LEGEND:

I - Total school population
(entire cone)
II - Environmentally determined
problems of learning
III - L.D., neurophysiological dysfunction
II & III - Learning impaired population

A - Aphasia

CP - Cerebral Palsy
D - Dyslexia
EMR - Educable Mentally Retarded
ED-H - Emotionally Disturbed Hyperactive
SM-D - Socially Maladjusted-Delinquency
E - Epilepsy

schema can be appropriately applied to adult learners.

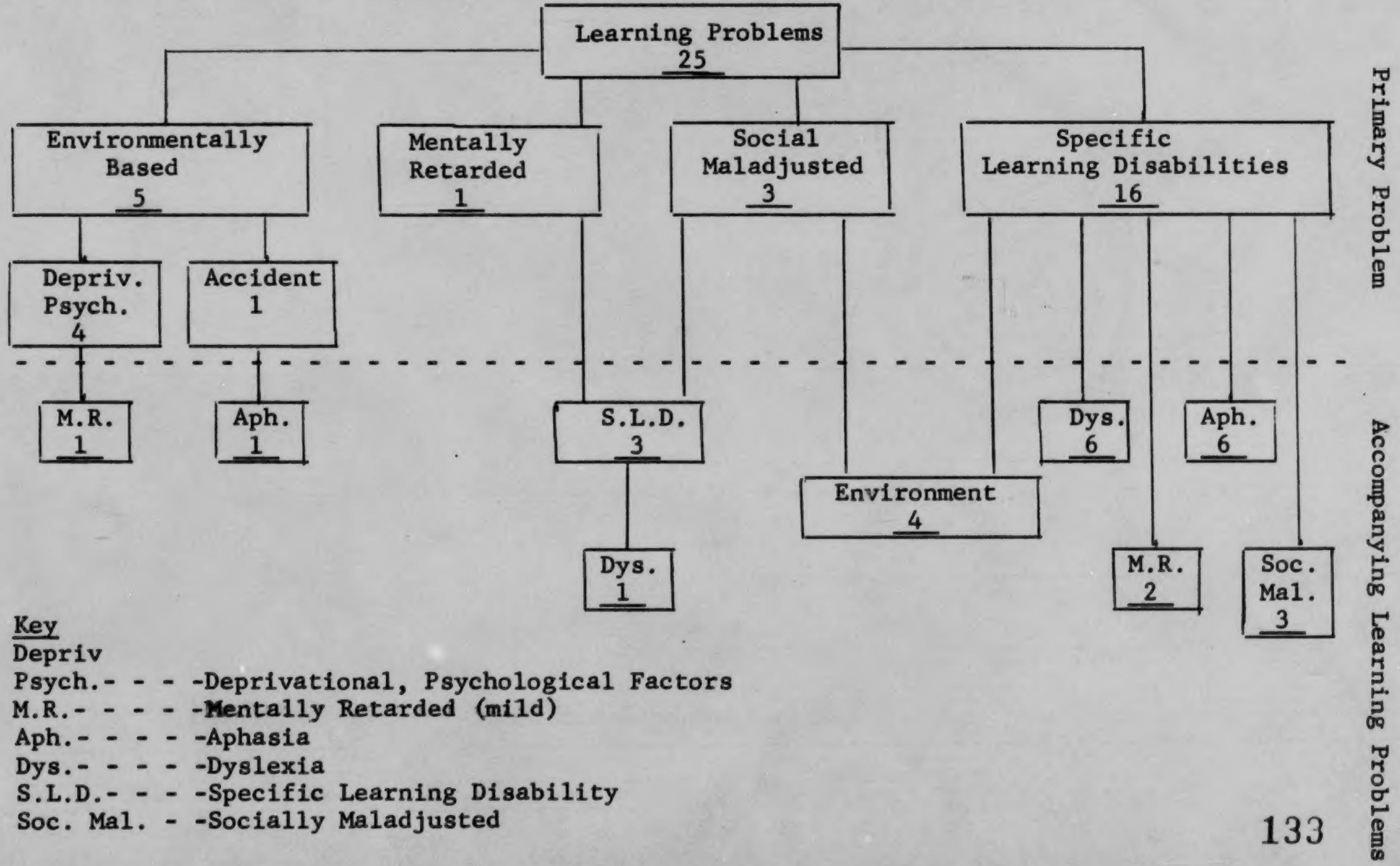
It is important to establish that what is broadly referred to as learning disabilities includes both the relatively larger percentage of "environmentally determined problems of learning" (II) and the relatively smaller percentage of "LD, neurophysiological dysfunction" (III). Hence both groups, II and III, comprise the "learning impaired population." This composite group of exceptional learners can always be correctly referred to as having learning problems. Note that only the clinical categories of aphasia and dyslexia are exclusive within LD. The proportions of overlapping of the other categories with LD are interesting and might not be predicted by many educators.

The schema in Figure 3 is informative; however, it doesn't allow for representation of coterminous conditions. For example, an individual may be socially maladjusted, LD and dyslexia; or may be LD, educable mentally retarded and aphasic.

The learning problems of the 25 persons dealt with in this project are depicted as accurately as possible in Figure 4 based on diagnostic evaluation and staff consensus. The major consideration in program assignment was the "primary handicapping condition." The primary handicap can be defined as the type of problem that appears most responsible for the person's learning difficulties. From an ecological perspective (taking into account the interactions of major life experiences) it is difficult at

Figure 4

Primary and Secondary Learning Problems of
25 Adults in A.B.E. Programs


Learning Problems 25
Environmentally Based 5
Mentally Retarded 1
Social Maladjusted 3
Specific Learning Disabilities 16
Depriv. Psych. 4
Accident 1
M.R. 1
Aph. 1
S.L.D. 3
Dys. 6
Aph. 6
Environment 4
Dys. 1
M.R. 2
Soc. Mal. 3
Primary Problem
Accompanying Learning Problems

Key
Depriv
Psych.- - - -Deprivational, Psychological Factors
M.R.- - - - -Mentally Retarded (mild)
Aph.- - - - -Aphasia
Dys.- - - - -Dyslexia
S.L.D.- - - -Specific Learning Disability
Soc. Mal. - -Socially Maladjusted

times to ascertain primary handicap with adults. Specific treatment programs were based on the interface of primary and secondary problems as well as individual pro~~ss~~cessing characteristics.

All individuals referred to this project did have learning problems of significant nature. Sixteen students were diagnosed as having specific learning disabilities involving an inferred neurophysiological basis as the primary learning handicap.

The causation and conditions of LD will be dealt with in greater detail in Chapter VI. Cursory reference to terms in Figure 4 is given here. Environmentally based learning problems may be due to physical or emotional deprivation or trauma, and generally occur after bith. Dyslexia is generally regarded as an inherited condition of perceptual disorders that results in extreme difficulty acquiring the necessary visual-auditory associations involved in basic reading and spelling skills. Aphasia is a broad term for central dysfunctions involving language abilties. The term social maladjustment pertains to psychological difficulties beyond the expected adjustment difficulties faced by handicapped persons. The accompany learning problem descriptor "environmental" denotes present life conditions (family relationships, penal difficulties, etc.) that impinge so heavily on general stability so as to create additional learning problems.

The representation of the complex of learning problems specific to any one individual could not be adequately portrayed in Figure 4. For instance, one learner was counted only in the primary problem category of specific learning disability while another learner was counted not only in the primary S.L.D. area, but also in the accompanying learning problem areas of dyslexia, mental retardation and aphasia. Hopefully, the design of the figure will give the reader a greater understanding of the problem conditions inherent in the exceptional learner.

CHAPTER VI

ETIOLOGY, CONDITIONS AND TREATMENT APPROACHES

This section of the report presents a cursory background of historical development of LD, discusses the use of medical terminology with adults and presents information on causality of LD. A chart has been devised to show the relationships between major etiological and treatment approaches. The relevancy of these various approaches to the adult is discussed.

Historical Perspectives

Learning disabilities as a definitive educational handicap has a relatively short history. However, the very earliest ideas about learning difficulties were set forth by physicians in the 1800's who tried to associate particular disorders of spoken language with specific areas of injury in the brain. The early foundations of diagnosis and treatment evolved from laboratory studies of individuals who were normal but could not read (labeled "word blind"). Direct beginnings of the field came from medical investigations of brain injured war veterans in the early 1900's in Europe. (It is ironic that the first studies of learning deficits were done with adults and yet the presently large professional field has grown almost solely out of concern for children). The data from the war veterans was adapted and applied to children in the U.S. who exhibited hyperactive behavior and severe deficits in visual-motor or language capability. Several clinic schools were established for children in various parts of the country between 1920 and 1950. These pioneering efforts were concerned with children of normal intelligence with extreme educational problems.

Theories of causation, diagnosis and treatment developed in the 1950's and 1960's in rather isolated professional fields: neurology, psychiatry, speech and language pathology, physical therapy, optometry, linguistics, psychology and special education. Efforts to communicate and integrate these bodies of knowledge are far from complete today. Multidisciplinary approaches with learning disabled adults have yet to become a reality. A model that has been proposed by the Kulick Foundation, '3 Phase 5 Clinic' Team Approach, is outline in Appendix G.

The terminology and definition of the condition now recognized as learning disability has been conceptualized in many ways over the years. "Strephosymbolia" meaning twisted symbols was used by Orton, a neurologist, in the 1930's to refer to disturbances with language that were attributed to lack of clear brain hemispheric dominance. In the 1940's, Strauss and Lehtinen used the term brain-injured child in distinguishing between retarding conditions resulting from external injuries (exogenous) and from internal genetic factors (endogenous). Later 'brain-injured' was changed to Strauss syndrome. Clements placed disorders along a continuum of severity in the 1960's under the title of minimal brain dysfunction. Less severe conditions were characterized by hyperactivity, attentional deficits, poor motor coordination, impaired conceptualization, and "soft" neurological indicators (signs of delayed development in perceptual, language and motoric function). More severe involvement was also accompanied by cerebral palsy, epilepsy, mental retardation and severe language and psychological problems.[48]

In one of the most thorough bodies of collective knowledge about LD, Chalfant and Shefflin developed a conceptual framework that could accommodate research from many disciplines. This model (Figure 5) was based on computer information processing.

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[48] S. D. Clements, "Task Force I: Minimal Brain Dysfunction in Children," Nat'l Institute of Neurological Diseases and Blindness, H.E.W., 1966.

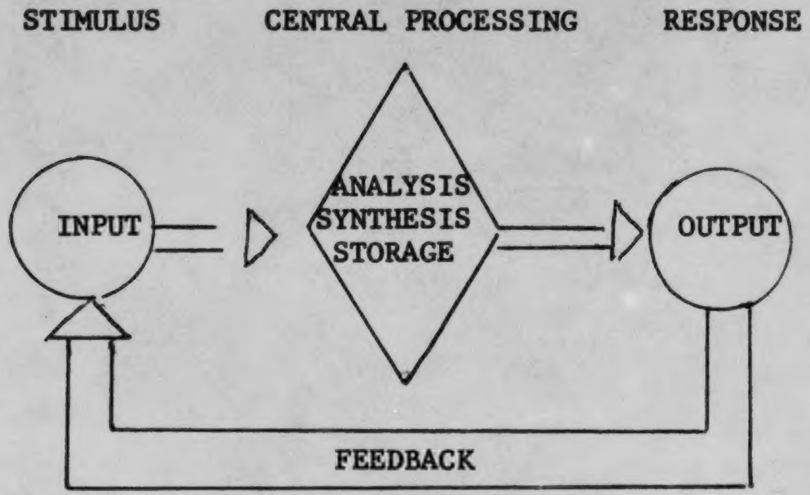

Figure 5.--Computer Model for Information Processing[49]

> Auditory, visual and haptic stimuli (or sensory information) are transmitted to the central processing mechanism (brain) where they are analyzed, integrated and stored. The behavioral response of the subject serves as an additional input source (feedback) for correcting or adjusting further behavioral responses.[50]

Thus, learning disabilities can be considered central processing dysfunctions with disorders occurring in the analysis synthesis, storage or symbolic use of information. This type of processing model is highly useful in diagnosis, communication of test results and remediation. The term central nervous system refers to the brain mechanism itself, whereas peripheral nervous system denotes sensory function; e.g., seeing, hearing. A definition that considers learning disabilities as a neurologically-based problem with observable behavioral symptoms (i.e., psychological) is offered by Myklebust.

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[49] J.C. Chalfant and M.A. Scheffelin Central Processing Dysfunction in Children: A Review of Research: Nat'l Institute of Neurological Diseases and Strokes, H.E.W., 1969, p. 3.

[50] Ibid., p. 3.

> ...a psychoneurological learning disability, meaning that behavior has been disturbed as a result of a dysfunction in the brain and that the problem is one of altered processes, not of a generalized incapacity to learn.[51]

The term learning disabilities, originally proposed by Kirk in 1962, referred to "a retardation, disorder or delayed development" in areas of specific academics.[52] Thus, neurological implications (which often cannot be directly measured) were minimized and observable behavioral problems were emphasized. While this approach was more pragmatic for educators, it had the effect of 1) minimizing the seriousness of the problem, and 2) opening the way for a "catch-all" term for any problem with learning. An additional peculiarity of the current definition given below is the exclusionary component. Hence a major part of the legal definition tells what learning disabilities are not.

The National Advisory Committee on Handicapped Children formulated a definition in 1968 that would be used in funding special education programs for LD children. After several years of extensive work to improve this definition, the USOE's final regulations under PL 94-142 were released in 1977 with virtually no changes.

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[51] H.R. Myklebust and D.J. Johnson, Learning Disabilities: Educational Principles and Practices. New York: Grune and Stratton, 1967, p. 8.

[52] S.A. Kirk, Educating Exceptional Children. Boston: Houghton Mifflin Co., 1962, p. 261.

> "Specific learning disability" means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, or mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantages.[53]

This definition presents problems when applied to adults, particularly the exclusionary statement. It is often difficult to determine the primary handicapping condition when several of factors are involved. The adult with learning disability must be approached from an ecological perspective; i.e., the product of the original LD condition, childhood instructional factors, social/emotional development and compensatory idiosyncrocies.

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[53] U.S. Office of Education. Assistance to State for Education on Handicapped Children: Procedures for Evaluating Specific Learning Disabilities. Federal Register, 1977, vol. 42 p. 65082-65085.

Etiology and Treatment Approaches

The causes of learning disabilities appear to be almost as numerous as the types of learning disorders, the needs of individuals with learning disabilities and the many forms of treatment. The etiology of LD depends on to whom the question is addressed; theories of causation/treatment have developed in varied fields - pediatric medicine, neurology, allergy, pharmacology, occupational therapy, psychiatry, psychology, nutrition, speech/language pathology, special education, optometry, etc. Generally poor efforts to coordinate these separate bodies of knowledge have been made. To a society relying heavily on a medical model of pathology, i.e., disease - diagnosis - treatment, the condition of learning disability is confounding. A physical, organic basis for the disorder is simply not measureable in any precise terms given our present understanding of the problem.

Physicians often cite the presence of "soft neurological signs;" e.g., poorly developed reflexes, poor motor coordination among the learning disabled. A host of behavioral indicators and particular responses to test items require many assumptions about what may be happening within the brain. Thus, we can only observe and measure input and output; hypotheses about internal processing remain at best, theoretical, and at worst, purely speculative. To help the reader appreciate the complexity of the problem, Table 13 lists general approaches to LD causation with accompanying diagnostic procedures treatment plans.

Each of these approaches certainly hold some degree of validity although critics of each perspective are as numerable as are proponents and advocates. It must also be pointed out that many people working in any area of learning disabilities do not necessarily ascribe to one particular approach at the expense of dismissing other possibilities. Probably the majority of LD teachers view the truth as a combination of these frameworks. Each of the approaches listed in Table 13 have generated major theories, frequently in conflict with each other.

This chapter will be devoted to brief summaries of the viewpoints. The applicability (or irrelevancy) of these perspectives as pertaining to adults with LD will be presented. Statements made here will directly relate to chapters VIII and IX of this report dealing with educational therapy for adults.

Table 13

Perspectives on Learning Disabilities: Etiology and Treatment

Approach	Diagnostic Procedure	Treatment
Neurological or Cerebral Dysfunction or Disorganization	Neurological exam; Sensory-motor testing	Sensory-motor training
Organic or Constitutional Pathology	Medical exam; EEG	Medication or Educational Procedures
Biochemical Imbalances	Behavioral Survey; Allergy exam; Dietary Survey	Stimulant drugs or Dietary changes
Genetic	Family History	Educational
Behavioral; Environmental	Personality tests; Family Dynamics	Psychotherapy or Behavior Modificatio
Environmental Deprivation	Nutritional and Sociological Survey	Environmental Intervention
Developmental Lag	Medical or Educational	Time or Intervention
Sensory Modality Deficit	Optometic or Audiological Evaluation	Eye Training
Language Deficiencies	Speech/Language or Educational Testing	Language Development
Psycholinguistic Discrepancies	Psycholinguistic Testing	Strengthen Deficits
Perceptual Processing Deficit	Psycho-educational Testing	Remediate Deficits
Information Processing Problems	Psychol-educational Testing	Educational Strategies

Cognitive Differences	Psycho-educational Testing	Cognitive Strategies
Task Analysis	Educational Tests	Sequencing Educational-Tasks; Precision or Mastery Teaching
Interactional Shortcomings	Psycho-educational Testing; School History	Educational Procedures

One obvious cause of brain dysfunction, and of LD, is injury occuring during any period of a person's life. Research has indicated that any one of a number of prenatal, perinatal and early developmental deviations greatly increase the probability of LD. Some of these factors were identified in a thorough study of over 400 children with learning problems at a diagnostic center in Texas. Prenatal influences included a number of problems such as health, medication, drug use during pregnancy. Perinatal factors included prematurity, cyanosis, toxemia, prolonged labor, induced labor, difficulty delivery, blood incompatibility, low birth weight and postmaturity.[54] Abnormalities and delays of developmental milestones have long been recognized as predictors of learning disabilities. Developmental histories usually focus on motor development (crawling, walking, handedness) and on speech and language acquisition. Prolonged high fevers periods of unconsciousness and exposure to certain toxins in the environment are also consideration.

These prenatal, perinatal and developmental deviations do not signify the presence of a learning disability. Rather, they increase the risk factor, or the likelihood, of having learning problems.

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[54] Don A. Smith and Bobbie L. Wilborn. "Specific Predictors of Learning Difficulties." Academic Therapy, vol. 12, no. 4, pp. 471-477.

A number of early and recent treatment approaches to learning disabilities are considered highly controversial in the field. Among these are dietary changes based on allergies, additives, trace minerals, reactive hypoglycemia and orthomolecular medicine (megavitamin therapy); neurophysiological retraining such as the Doman - Delacato patterning and Ayres' sensory integrative therapy; and optometric training.

The powerful A.M.A. (American Medical Association) has been fervent in its criticism of all of the above therapies. Educators have generally followed suit, soundly rejecting these ideas which could not be proven. On the other hand, parents with LD children have often and necessarily looked beyond the confines of the school for help. Thousands claim their children have been helped by each of the above therapies. Research has not been conclusive on the success of any of these treatments, but neither has research on any known educational treatment.

The position taken here is that none of the underlying conditions for which these treatments attempt remedy are the actual cause of learning disabilities. However, these behavioral conditions frequently accompany and accentuate the learning problem. Furthermore, each treatment mentioned above has been demonstrated in a number of circumstances to greatly improve behavioral functioning in its respective area - attention, hyperactivity, control, motor coordination and eye movement control. New therapies also, such as hypnosis, biofeedback and meditation will probably receive similary criticism, yet will prove helpful to behavioral control and thus, to learning, for many individuals.

What is the applicability of the treatments discussed above to adults? Certainly the theories dealing with neurological organization have no relevance to the adult who is well beyond the age of neural plasticity.

Most dietary treatments are directed toward behavior correlates of LD - hyperactivity in children. It is well documented that hyperactivity of this extreme type declines during puberty. The psychotropic drugs (Stimulants) so frequently used to manage children's behavior no longer are effective at adolescence. The results of the ABE/TV survey indicating that hyperactivity was no longer a primary symptom of LD in adults also support this fact. Again, while attentional disorders are commonly observed in adults, such behaviors in themselves do not constitute a learning disability.

One can logically argue that learning at molecular and cellular levels does involve biochemical reactions that are governed by many aspects of nutrition. This is a promising avenue of investigation, but the current state of the art is many years from fruition, it is felt. However, a basic nutritional survey is in order with LD adults in terms of general awareness of good nutritional habits.

A high incidence of visual problems among the LD population has been quite well substantiated. Such problems are not related to the actual acuity or ability to see. Rather, these difficulties involve eye muscle control. Weak eye muscle control may cause problems with convergence, and the way the eyes function as a team. In turn, these ocularomotor inefficiencies may hinder the development of good reading and writing skills. Again, these visual problems are not the cause of the learning disability but frequently contribute to its manifestation.

The eye muscle exercises prescribed by developmental optometrists often help a child use his eyes more effectively by correcting muscular imbalances. Such corrective action naturally makes learning easier. However, these same visual exercises do not appear to benefit adults as they do children. No known research, thougn, has been attempted.

A number of early theories conceptualized learning disabilities as "maturational lag." It is commonly known that development may proceed unevenly within the individual. Neurologically some systems may develop at different rates, resulting in "lags" in certain types of processing. The concept of uneven development does hold much validity in examining a learning disability in a child.

However, the mature adult cannot be considered in this framework unless "lag" is redefined as "permanent arrest." Such attribution entails risk and is not helpful in treatment.

An exception in developmental delay may be applicable to the young adult. Jordan delineates a "Shoestring Baby Syndrome" in which particular children's learning problems are attributed to delayed myelinization of the nervous system. Intersensory integration is poorly developed as a result. Jordan sites "breakthroughs" in the individuals occurring as late as the mid-twenties.[55]

Another early influential approach to learning disabilities was psychiatric. Learning problems were attributed to emotional disturbances in early development, most notably child-rearing practices. Faulty ego personality development was thought to be central to learning problems. Later educational definitions sought to clearly distinguish between primary emotional disturbance (accompanied by learning problems) and primary learning disability (with concomitant adjustment problems).

The fact that emotional maladjustment symptoms coexist with LD is well documented and still under investigation. However, most professionals view social-emotional problems resulting from the underlying LD condition continual failure in school logically produce psychological problems as does the hyperactivity/attentional syndrome. Additionally there is substantial evidence that the poor communicative abilities so prevalent among the LD population are inherent in the condition and result in poor interaction with peers. The subtle verbal and gestural cues used in personal interactions seem to be frequently misinterpreted by persons with LD. This validated observation holds true with children, adolescents and adults.

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[55] Dale Jordan. Notes from presentation. Adult Education Resource Center, Englewood, Colorado, Spring, 1980.

While a stricly psychiatric base for learning disability is generally not accepted today, the importance of professional psychological services is recognized. Family therapy appears to be a critical factor in the success of a total treatment program in many cases.

Genetic and Neurological Aspects of Learning Disorders

Two terms stated in the preceding definition warrant special consideration, dyslexia and aphasia. Dyslexia is primarily a medical term for a neuro-physiological disorder that manifests itself in severe problems in the acquisition of reading skills. There is substantial evidence that reading disability of the dyslexic type of LD is genetically transmitted, usually through the male side of a family, although the details of this are yet unclear. Of children with genetic dyslexia, males prevail 3:1 over females in moderate cases, and 10:1 in severe cases.[56] This knowledge is one of several key factors which helps explain the predominance of learning disorders in males. Dyslexia is frequently categorized as visual or auditory, if one of these two modalities shows pronounced deficits. Accompanying problems include difficulty with various representational systems; e.g., time orientation, directional sequencing. Spelling skills are seriously deficient in the dyslexic.

Educators working with children generally do not use the term, although frequent reference to dyslexia is made in medical and psychological literature. This classification is more widely used with adults; in fact, it appears to be used too broadly to be meaningful in a number of circumstances. A diagnosis of dyslexia is a serious matter in this writer's opinion, and should be reserved for confirmable cases of a serious nature.

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[56] A. Bannatyne, Language, Reading and Learning Disabilities, Springfield, Illinois: Charles C. Thomas, 1971.

Aphasia is a type of learning disability involving language understanding and production accompanied by many varieties of memory deficiency. The literature on types of aphasia is vague and often conflicting. Some of the early work on childhood or developmental aphasia established a close similarities between the symptoms of this type of language disorder and acquired aphasia in adults known to have sustained brain damage.[57] Definitions and descriptions of aphasic children are very similar to those given for severe learning disabilities involving language understanding and production. Two common classifications are expressive or motor aphasia and receptive or sensory aphasia,[58] with the latter being more debilitative since both input and output are affected. Memory deficiencies of many forms are documented among aphasics; e.g., dysnomia (reduced verbal fluency, inability to retrieve specific words at will), verbal paraphasia

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[57] H.J. McGrady, "Language Pathology and Learning Disabilities." in H.R. Myklebust (ed.) Progress in Learning Disabilites, vol. I. New York; Grune and Stratton, 1968, p. 217-224.

[58] L.F. Wilson, "Characteristics of Aphasia in Children." in S.R. Rappaport (ed.) Childhood Aphasia and Brain Damage. Narberth, Penn: Livingston, 1964, p. 8-9.

(word substitutions, circumlocutions).[59]

Wiig and Semel have compiled the most recent, extensive work in this area, much of which is reported in their book Language Disabilities in Children and Adolescents. Their findings indicate much overlap between performance characteristics of dyslexics and aphasics that are evidenced in both LD children and adolescents and continue into adulthood.[60]

Other conditions of learning disabilities include disorders known as dyspraxia and dysarthria which involve the expressive motor system in such a way that the person may not be able to control speech and articulation normally. All of these areas of difficulty have been observed in adults with learning disabilities. The interface of these problems in any one individual call for greater professional knowledge, careful diagnosis and sensitive treatment.

Chapter VIII will more carefully scrutinize the role of language in learning disabilities as manifest in adults. Out of this examination the beginning of a theory of adult learning disabilities can be constructed. Only a general overview will be presented in this report.

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[59] E. H. Wiig, and E. M. Semel., Language Visabilities in Children and Adolescents. Columbus, Ohio: Charles Merrill, 1976, p. 211-214.

[60] Ibid., p. 194-223

Many professionals working with LD children feel that some degree of neurophysiological difference is involved in the functioning of the individual with true learning disability. The degree of the neurological difference, the location of the problem within the brain, and the accuracy of such measurements are issues with far less consensus.

The most prominant views on neurological development, learning and behavior today (e.g., Lenneberg, Vygotsky, Luria, Eccles, Hebb) approach the old nature - nurture issue not as a dichotomy, but rather as a dynamic interaction. The brain does not have specific areas that correspond with specific behavioral processes. Instead, various systems within the brain are integrated and coordinated in complex manners to produce certain behaviors.

Characteristics of the brain that are species - specific to man are cell density patterns, a highly-convoluted (many "folds") cortex and lateralization.[61] Lateralization refers to the brain's distinctive two - sided organization. This lateralization develops as the child matures.

Certain areas of the brain are primarily involved in certain types of function. For example, language is generally dominant in the left hemisphere for most individuals. Within the left hemisphere, motoric aspects of language are governed by the anterior regions and sensory aspects by the posterior region. The temporal sequencing (ordering in time) of events occurs within the left hemisphere. The right hemisphere is thought to be more specialized for visual-spatial functions, musical tones and pitch, and emotional interpretation. Luria suggests that the following are most strongly represented in the left hemisphere; propositional relationships of time, space and sequence; grammatical and syntactical structure; phonetic analysis; and complex, logical, higher level symbolic processes.[62]

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[61] Eric Lenneberg. Biological Foundations of Language. New York: Wiley and Sons, 1967.

Luria's position which probably is the most-widely accepted today, falls between narrow localization (particular area of brain corresponds to particular function) and global undifferentiation. This position is well-articulated by Simpson.

> It is not correct to say that one hemisphere is the verbal or auditory one and that the other is the nonverbal or spatial one. Language is in both hemispheres. Both hemispheres are needed to complete complex spatial puzzles. It is not the stimuli (motor, sensory, visual or auditory) per se but the cognitive processes of either left or right that selects the component of a complex stimulus for which the hemisphere is specifically equipped.[63]

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[62] A. R. Luria. Basic Problems of Neurolinguistics. The Hague: Mounton, 1976.

[63] Bickley Simpson, "Hemispheric Specialization." In Games 'n' Grids Manual, Helen B. Grush. Lexington, Mass: LEAD Ed. Resources, 1980, p. 69.

Much of what is known today about neurological mechanisms has been derived from detailed study of adults (and children) who have sustained brain damage from accidental injury, cardiovascular lesions (e.g., stroke) or necessary surgical procedures. Such language/learning disorders would seem to offer some guidance in dealing with the adult with congenital/development disabilities. The symptoms observed with aphasia, dyslexia, agraphia mentioned earlier should logically have some parallels.

The literature on acquired language disorders in adults is extensive in neurophysiology and neuropsychology. A review of selected materials in these areas indicates that there are many similar types of observable symptoms in acquired and congenital conditions. However, the differences are too great to make any useful generalizations. It appears that acquired disorders are more functionally severe and more specific while congenital disorders reflect developmental deviance and are more pervasive, yet more subtel in symptomology.

It is well-documented, though, that deficiencies involving language are far more global than other types of deficits. This knowledge is helpful in appraising the adult with developmental learning disorders. It also suggests that serious learning disabilities in adults are language disorders.

> Verbal defects tend to have more obvious and widespread cognitive consequences than defects in other

> functional systems because task instructions are frequently verbal; self-regulating and self-critiquing mechanisms are typically verbal; and ideational systems - even for nonverbal material - are usually verbal.[64]

The age at the time of injury is the critical factor in the severity of the resulting disorder, with recovery of language function greatest at early ages. (Lenneberg, 1967, 1973; Critchley, 1970; Kleffner, 1973; Penfield and Roberts, 1959). Remarkable plasticity in neural organization to accommodate language is noted in the young child. But after puberty, according to Lenneberg, "the ability for self-organization and adjustment to the physiological demands of verbal behavior quickly declines."[65] Critchley, on the other hand, believes that the prognosis for language recovery after trauma is good through the second or third decades of life.[66]

Most literature dealing with the topic of congenital and acquired aphasia emphatically states that symptoms and treatment are so radically different that comparison is not justified. (Myklebust, 1965; Lenneberg, 1967; Chalfant and Scheffelin, 1969; Kleffner, 1973, Rosenthal, 1977). Kleffner regards congenital/ developmental aphasia as resulting in deficits of linguistic competence while acquired aphasia (beyond the age of language acquisition) results in strictly performance deficits.[67] Linguistic competence refers to a person's underlying knowledge of language meaning, structure, sounds and organization. This basic, inherent understanding, according to linguists, cannot be directly measured; it can only be inferred from a person's linguistic performance. Linguistic performance refers to actual use of language, which is observable in verbal expression, interaction and comprehension.

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[64] Muriel Lezak. Neurophsychological Assessment. New York: Oxford Univ. Press, 1976, p. 25.

[65] Lenneberg, 1967, p. 158.

[66] MacDonald Critchley. Aphasiology and other Aspects of Language. London: Arnold, 1970.

Congenital language disorders, therefore, are pervasive in that they result in underlining deficiencies in language understanding as well as poor overt performance. Observations of ALD in both general conversation does indicate such deviance in linguistic competence and in linguistic performance.

Another logical approach to neurological involvement in ALD is examination of findings in children with LD. Unfortunately, a discussion of neurophysiological deficits involved in developmental language disorders in children can not produce any definitive statements. The medical portion of the learning disabilities field is still searching for answers and produces much controversial evidence of specific neurological abnormalities. Developmental delays in areas of speech, motor and perception usually produce only "soft" (behavioral as opposed to medical) neurological signs.

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[67] Frank R. Kleffner, Language Disorders in Children. New York: Bobbs-Merrill, 1973.

The situation is summarized:

> ...(T)here are no satisfactory ways of determining in an individual child whether or not the soft signs are indicative of brain injury or some other condition not due to structural damage to the brain.[68]
>
> ...(W)e have no techniques which could demonstrate the structural characteristics of a brain whose owner learned to speak at a normal age to distinguish it from certain brains whose owner had a congenital language disability without other neurological abnormalities.[69]

Two further developments in neurological measurement will be briefly mentioned, neurometrics and contralateral experiments. Both are techniques which have been utilized in attempts to distinguish LD from non-LD students. Although only moderate confidence can be placed in either methodology at this time, both show promise for the near future.

Neurometrics is a statistical computerized method of evaluating electroencephalogram (EEG) and average evoked potentials. These measures are then compared to age norms to detect abnormalities.[70] Traditional methods of EEG readings are highly subjective and have not been very successful in determining presence of LD. At best, 70% were discriminated, with 30% false positives and many LD undected.[71] This research reported from the Brain Research Laboratories at New York University Medical Center promises much greater efficiency and reliability in assessment than the educational field of LD could ever realize. Several different patterns for different types of LD are being investigated.

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[68] Michael Rutter, "Brain Damage Syndromes in Childhood: Concepts and Findings". Journal and Child Psychology and Psychiatry vol. 18, 1977.

[69] Eric H. Lenneberg, Biological Foundations of Language. New York: John Wiley & Sons, 1967.

[70] Hebert Kaye, et.al., "Neurometrics: No longer in its Infancy, but not Quite Mature." In Assoc. for Child with L.D. (ACLD), Scientific Studies Committee, Conference Medical Backgrounder, ACLD Internat'l Conf., Milwaukee, Wisc., 1980.

One interesting finding reported by Kaye was the children who reversed letters all had greater asymetry in their graphs. However, the particular patterns varied greatly by individual. Thus, it seems many possible neurological deviations may be involved in just this one symptom of LD.

Positive factors of neurometrics include high reliability and objectivity. It appears that LD children do have a high incidence of abnormal electrical activity in the brain. Furthermore, studies show a complete absence of cultural, ethnic or sex bias in normal children.

Another area of relatively recent neurological interest involves the "split brain" studies conducted chiefly at the California Institute of Technology by Gazzaniga and Sperry.

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[71] Herbert Kaye, Presentation at Medical Symposium, ACLD Internat'l Conf., Milwaukee, Wisc., 1980.

These experiments are done on subjects whose corpus callosum had been surgurically cut to control severe seizures. It was found that under this condition, the two hemispheres functioned independently of each other, yet without seriously impairing mental abilities. The particular behavioral findings are fascinating and have served to enhance man's understanding of the brain. Unfortunately, popular sentiment has become so carried away with the right brain - left brain issue that it has lost much of its scientific credibility.

Several areas of research related to laterality have been generated in LD. Among the most common are dichotic listening and foveal and parafoveal tachistoscope presentation. Both techniques attempt to "send" messages to one side of the brain by presenting stimuli to the opposite ear or eye. The technique is based on knowledge of contralateral control; i.e., sensory organs connected to opposite side of brain. Contralateral organization has been known about for a long time, but these relatively new measurement techiniques leave much to be desired in terms of valid research.

Many studies have found evidence that poor readers differed from good readers in visual or auditory processing; other studies have found no discernible differences. When an LD teacher reports phenomenal results by sending classical music to one ear and sight words to the other with one eye closed, the case has gone too far. In a thorough review of contemporary experimental measures of laterality, Colbourn concluded that the capability of dichotic listening paradigms and tachistoscopic studies to identify underlying cerebral factors has been grossly overestimated.[72]

In summary, present knowledge of the brain, in no way, clearly defines what the precise differences between LD and non-LD are. Clearly, no anatomical differences exist. On the other hand, differences in processing do exist. A veritable body of psycho-educational test results, now supported by neurometric evidence of different electrical activity in the brain, demonstrate that differences do exist. What these exact differences are is yet to be learned.

One tentative conclusion does seem warranted. In reviewing the literature of neurophysiological studies, a number of authorities do find that there is a marked deficiency among learning disabled students in the use of efficient cognitive strategies involving language processing. (Kleffner, 1973; Rosenthal, 1977; Pirozzolo, 1979; Vellutino, 1979). Rosenthal suggests that the critical difference may be the

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[72] C. J. Colbourn, "Can Laterality Be Measured?" Neuropsychologia, vol. 16, 1978, pp. 283-289.

> ...inability to change to the cognitive mode required... (in a particular task). Perhaps...dyslexics are extreme versions, neurophysiologically and genetically based, of these inabilities to alternate or to integrate cognitive styles."[73]

Educational Approaches

Theories of treatment in the 1960's were heavily weighted toward perceptual-motor development. These theories have been challenged since the early 1970's, although only recently have they lost influence in the mainstream thinking of the field. The tenacity of these early foundations still appear in some contemporary hypotheses in new forms. The contribution of perceptual-motor theories did provide the bases of many later ideas about LD, and need to be examined briefly.

Perceptual-motor refers to the taking in of sensory information, the perceptual interpretation based on past experience and the motoric response, internal or external action. Two bases for this background are: 1) developmental psychology (Montessori, Gesell, Piaget, Werner); and 2) neurological deviations (Goldstein, Werner, Strauss, Lehtinen). This voluminable background influenced Cruickshank's work with brain-injured children within a broad perspective of special education; e.g., mentally-retarded, cerebral palsied. Several major theories were generated.

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[73] Joseph H. Rosenthal, The Neuropsycholpathology of Written Language. Chicago: Nelson-Hall, 1977.

Doman-Delacato motor patterning has already been mentioned as highly controversial. The other theories, particularly Kephart's, had much better receptions.

Getman's visuomotor theory set forth vision as the primary orientator and interpretor of experience. Visual functions are developmental and hierarchical with each stage dependent on the prior level. Higher level cognition can only be achieved when earlier stages have been accomplished.

Barsch's theory of movigenics states that movement and perception are integral. Spatial aspects are critical to the theory, with efficiency of movement the major goal for the child. Sequences, rate and time are dimensions of movement efficiency.

Kephart's perceptual-motor theory starts with a premise similar to Piaget's emphasis on sensory motor schemas are necessary to assimilation and integration of experience. Children with LD, according to Kephart, have not been able to successfully build a consistent, predictable base through perceptual-motor experience and need special help. Motoric patterns need to be developed for higher level learning to occur. Synchrony, rhythm and sequence are important concepts. Stages of learning are set forth. Perceptual motor match and laterality-directionality are achieved to form a foundation for higher level learning.

The existence of poor body coordination, poor eye-hand coordination, poorly developed concepts of time and direction, etc., leaves little doubt as to the existence of these problems among the LD population. However, the affect of these underlying perceptual-motor deficiencies on academic learning is seriously questioned. Too many exceptions exist for adequate correlation; i.e., persons with poor perceptual-motor coordination can be successful academically, and some persons with severe reading disability are outstanding athletes or have excellent fine motor skills. Another criticism levied at these theories is their virtual ignoring of audition and language. The field of special education became disenchanted with these theories when treatment improved motoric functioning but had no positive effect on academics.

Perceptual-motor treatment is not applicable to the adult in any realistic, practical sense. No improvements in this area can be expected with adults who are well beyond neural platicity ages. Only the results of direct practice with isolated skills such as handwriting are possible. If the adult learner has acquired legible writing in either manuscript or cursive, further instruction is not recommended. Work with reading and spelling is far more critical and productive.

Many perceptual deficit theories then evolved out of perceptual motor theories. Tests were developed to measure abilities in the three modalities of learning - vision (e.g., Grostig), Audition (e.g., Wepman) and haptic (e.g., Ayres). Identification of these perceptual deficits became manditory in LD assessment. Assumptions were made that LD consisted of a patterns of strengths and weaknesses in these functions. Functions within each area became known as recognition, discrimination, figure-ground, closure, etc. Furthermore, it was assumed that problems with academic learning were directly attributable to these perceptual deficits.

Several issues arose and several major aspects of learning were still ignored. The major issue for treatment was whether to teach to the deficient modality, attempting to strengthen it, or whether to try to give as much instruction to the stronger modality and bypass the weaker. Many LD teachers resolved the controversy by using both approaches in combination. Soon a more logical approach developed - that of integration of these modalities by using multisensory techniques (Fernald, Gillingham-Stillman, McGinnis). A multisensory approach is more sensible academically since reading involves both visual and auditory channels, and writing additionally involves haptic[74] function.

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[74] Haptic refers to three related aspects of bodily sensation and movement: 1) Taction 2) Kinesthesis - awareness of internal muscle states (tension, flexion); and 3) Proprioception - internal awareness of position of body structures (limbs, fingers).

One difficulty with multisensory techniques for some students is the phenomenon of "overloading." Too much sensory stimuli appears to have a flooding affect here, creating much confusion for the student.

These perceptual deficit theories do not clearly address three critical aspects of learning: language, memory and attention, Language is generally ignored, while memory and attention are subsumed under each separate modality. This subordination of cognitive processes under visual, auditory and haptic modalities has been confusing in terms of both empirical research and in practical treatment. Remedial activities prescribed for perceptual deficits were often unrelated to academics; e.g., finding embedded pictures, stringing beads, identifying sounds in the environment. Furthermore, research generally has failed to find the correlations between perceptual deficits and academic deficits that are necessary to validate these theories.

One important contribution to the field was the auditory-visual integration theory (e.g., Birch and Belmont, 1964). Research determined that one type of LD reading difficulties are associated with poor intersensory integration of visual and auditory stimuli. An excellent review of research up to 1969 is found in Chalfant and Scheffelin's work. Intersensory integration is defined as the "processing of multiple stimuli which are being transmitted through different modalities."[75] This monograph provides a thorough background in well-organized, summary form that is highly useful in understanding LD at all age levels.

Another monumental impact in the field was the development of the Illinois Test of Psycholinguistic Abilities (Kirk, McCarthy and Kirk, 1968).[76] The test was designed to assess strengths and deficits in a child's communicative processing by combining psychological and linguistic approaches. The battery, highly popular until very recently, is based on Osgood's (1957) communication model. Two levels are measured - representational (mediated responses) and automatic (immediate responses). Three processes are identified: receptive, associative and expressive. Several channels or modalities of input-output are focused on: visual-motor, visual-vocal, auditory-motor and auditory-vocal. The idea of the test is excellent. However, many criticisms have severely undermined its acceptance currently. The basic challenge has been its construct validity; i.e., the subtests don't measure what they purport to. This failure, it seems, is largely due to the complexity of human behavior and our inability to isolate specific processes and measure them.

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[75] James C. Chalfant and Margaret A. Scheffelin. Central Processing Dysfunctions in Children: A Review of Research. NINDS Monograph, No. 9. Bethesda, Md.: US Dept. of H.E.W., 1969, p. 51.

[76] Samuel Kirk, James McCarthy and Winnifred Kirk. Illinois Test of Psycholinguistic Abilities. (Rev. ed.) Urbana, Ill.: Univ. of Ill. Press, 1968.

The remedial activities based on this psycholinguistic model have suffered the same fate as those designed to remediate perceptual deficits. Remediation of processes does not appear to improve academic deficiencies.

What role do perceptual and psycholinguistic process deficits and remediation techniques have for treatment of adults? Very little beyond giving the teacher background is provided. Any perceptual process activity that is not directly related to academic work is adamently discouraged. No child has learned to read by sequencing blocks, matching shapes, etc. Certainly such activities are very far removed from adults' educational needs.

In summary, traditional learning disabilities theories of perceptual-motor and perceptual process deficits are presently on shaky ground after having been seriously challenged for the past five years. The challenge has been virtually on all fronts. Theoretical, constructs, empirical research findings and lack of valid practical treatment in academic improvement. Because of this evidence, adult educators are implored not to adapt the same unsuccessful philosophies and treatment approaches.

Do viable alternatives exist? One alternative has been the academic approach (e.g., Bateman, Engelmann). This philosophy has been to ignore the vagaries of psychological processes and concentrate on instructional task analysis. Task analysis refers to the breaking down of academic tasks into components that can be taught and mastered by the student in learning a particular skill. This approach, in many ways, denies the existence of learning disabilities. The onus of responsibility is on dyspedagogy, (poor teaching). Indeed many public school educators seriously question the existence of LD as an educational handicap, (e.g., Ysseldyke).

As criticisum of perceptual deficits mounted (e.g., Hammill, Larsen) the academic perspective gained greater power and influence.

For a while, the field of learning disabilities was divisively split into process and academic camps. Bitter conflicts and organizational politics have unfortunately diverted the attention of the field momentarily. However, the majority of the national LD leadership is anxious to avoid further battle and return to the business of examining new, more productive theories.

Those educators working with adults can quite confidently respond to the hypotheses presented above:

1) Learning disabilities do exist and persist into adulthood.
2) Learning disabilities involve differences in the processing of information that make academic learning difficult.
3) Perceptual-motor and perceptual deficit theories do not have direct applicability to helping the adult.
4) Task analysis and mastery learning have been attempted with very little success in helping adults.

In sum, traditional viewpoints of learning disabilities do not appear to address the issues in adults in regard to conceptualization of the probelm, assessment and treatment. Chapter VIII presents some ideas on beginnings of a theoretical and practical model of adult learning disabilities. The final section of this chapter will offer a glimpse into new theories of LD, many of which appear to hold greater promise for the adult learner.

New Directions for the Future

The topics in the major LD journals and newsletters and the titles of presentations at national, state and local conferences and workshops have undergone significant change in the past year. Many new, exciting ideas are being presented and researched. These recent theories have much greater applicability to adults than did earlier theories. A number of these "new" ideas are not actually new; good teachers have been using them for years with exceptional learners. However, the recent emphasis on learning as an active, constructive cognitive process represents a major shift away from the behavioral, perceptual perspective of traditional learning disabilities. The predominant themes of these ideas are outlined below:

1) Language is being recognized as one of the critical components of all aspects of learning. Linguistic deficits are

are being documented in all ages of LD students, and are being correlated with poor skills in all academic areas (including mathematics) and in social problems. Language appears not only to be the crux of learning disabilities in many cases, but also a highly productive treatment approach.

2) Cognitive strategies are rapidly ascending as the most productive way to treat LD in educational settings. Cognitive refers to active thinking processes in which the student engages to learn. This view point is generally the opposite of a behavioral (stimulus - response) approach in which the learner is a more passive recipient of information.

3) Metacognitive functions carry the cognitive process to a higher level. Metacognitive refers to the learner's awareness of what strategies or plans he is actually employing to learn. This awareness of one's own learning processes is beginning to be proven as perhaps the most important variable in successful learning.

4) It appears that chief characteristics of LD at all ages may be 1) a lack of active involvement in one's own learning, 2) the use of ineffective learning strategies without awareness that they are ineffective. Furthermore, lack of personal involvement and lack of knowledge about what productive learning strategies are leads to the rigid, inflexable approaches so often recognized in LD learners.

5) Perception, attention and memory are now being considered as cognitive variables that the learner can control, rather than structural entities. From this perspective, LD becomes a complex of problems in organizing and dealing with learning tasks as opposed to underlying defects.

6) Internal feedback and self-monitoring obviously entail some degree of awareness of what one is doing. These sources of self-correction are now becoming regarded as very important aspects of learning.

In sum, conceptualizations of learning and learning disabilities are undergoing change. Cognitive trends place focus on the various learning processes - attention, perception, memory, imagery - as active constructions of the learner. Furthermore, these processes can no longer be thought of simply as isolated strengths and weakness. An interactional approach seems more realistic. Without a doubt, these new directions entail greater complexity. These revisions of LD theory are already reflected in assessment procedures and treatment approaches.

CHAPTER VII

A PERSPECTIVE ON ADULTS WITH LEARNING DISABILITIES

Working with adults with learning disabilities as a primary career focus has necessitated the development of appropriate assessment procedures, methodology and materials. Much of this work has had to be done on the basis on personal experience due to the virtual nonexistence of literature and published materials for ALD. Even more difficult than generating effective procedures and programs has been the discovery of productive ways to think about learning disabled adults.

Two logical approaches in the search for a viable theory - children's learning disabilities and adults with acquired language disorders - were considered in Chapter VI. Neither background provided a realistic perspective. Chapter IV discussed the state of affairs in secondary level public schools. Again, no definitive answers could be provided. Therefore, a new way of conceptualizing the problems of ALD is in order. The following ideas are excerpted from a paper written by the report author, "Perspective of Speech

Communications Toward a Theroy of Developmental Learning Disabilities in Adults." (Univ. of Denver, 1980).

A Relevant Approach

The speech communication framework proposed here turns the focus of learning disabilities to language and communication disorders. The work of Myklebust (1965, 1967) Wiig and Semel (1976, 1980) and others offer pragmatic as well as sound theoretical basis for these ideas.

A careful appraisal of most adults with severe or moderate involvement indicates the problem to be one of central language dysfunction as observed in speech communication. The field of speech communication offers a broad multi-disciplinary philosophy from which constructs of human communication behavior can be examined both historically and contemporaneously. The study of spoken language provides a foundation upon which many facets of deviance in the human processing of information can be postulated.

The speech communication framework presented here is concerned with dynamic human interaction.. Examination of spoken language generates ideas about how we communicate with ourselves and others, hopefully leading to a better understanding of our inherent and intricate relationship with language.

The three levels of speech communication are intrapersonal, interpersonal and person-to-person.[77] The topic of learning disabilities as communication disorders is concerned with the first two levels. Intrapersonal communication is communication by, to and for oneself. Intrapersonal messages are characterized by Dance and Larson as "internalized vocal symbols for the purpose of achieving and maintaining individual and social adjustment."[78] Self-concept is thus inextricably bound to and moderated by intrapersonal communication. From a learning perspective, a number of critical components such as verbal mediation in problem solving, short-term memory, rehearsal and cognitive strategies are encompassed by this theory of intrapersonal communication.

The study of language is hypothesized as a major system of man from which interdisciplinary synthesis can be generated. If the position is assumed that language is an essential cognitive tool for ordering and classifying experience, then many other systems (e.g., perception, memory, cognition) can be productively examined from a language system of reference.

Myklebust (1965) emphasizes the hierarchical relationship of spoken language, reading and writing. Spoken language must exist before one can learn to read. One must be able to read before written expression can be learned. This pattern of development is well documented phylogentically and ontogenetically, neurologically and psychologically. Input precedes output on each level; i.e., receptive language develops before spoken language, and reading is learned prior to writing. The dependency of reading on spoken language is clearly recorded in most reading and learning disabilities literature. Well recognized also is the fact that learning disorders are progressively more complex and result in greater academic failure as the spoken language - reading - writing hierarchy is ascended.

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[77] Frank E. X. Dance and Carl E. Larson. Speech Communication: Concepts and Behavior. New York: Holt, Rinehart and Winston, 1972.

[78] Ibid., p. 51.

Another set of ideas about spoken language directs us inward rather than outward. The phenomenon of "inner speech" is the basic form of intrapersonal (individual, internal) communication. The inherent relationship of inner speech with the three functions of speech communication is apparent. The functions of speech communication are: 1) The individuals connections with the physical and social environment, 2) the development of mental processes and 3) the self-regulation of behavior, these depend in many ways on effective intrapersonal communication. Intrapersonal communication, in turn, is largely dependent on "inner speech."

Most obviously inner speech is silent and internal. Vygotsky states that "inner speech is speech for oneself" and that it is "structurally different than external speech;" i.e., inner speech turns thought inward while external speech objectifies thought outwardly throught words.[79]

Many studies of learning and problem solving have demonstrated the importance of inner speech (usually referred to as rehearsal and verbal mediation) to successful performance.

The following synopses of the four major terms - speech, symbol, language and spoken language - suggests potential areas of difficulty. Each area of deviance has been identified in some aspect of learning disabilities.

Speech is a highly complex communication system unique to man. By virtue of the intricacies involved, breakdowns may be anticipated in the coordination of perceptual, acoustical, muscular and neurological components. The rhythmical patterns underlying the rate and temporal sequencing (Lenneberg, 1967; Berry, 1980) may not be adequately syncronized. Such disturbances may result in observable problems with fluency, prosody[80] and articulation. Both perception and production of speech may be adversely affected by inadequate feedback of auditory, kinesthetic and proprioception information.

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[79] L. S. Vygotsky, Thought and Language. Trans., Ed. E. Hanfmann and G. Vakar. Combridge: M.I.T. Press, 1962.

[80] Prosody is defined by Berry as "the melody pattern of language perceived primarily as stress, intonation or rhythm." In Mildred F. Berry. Teaching Linguistically Handicapped Children. Englewood Cliffs, NJ: Prentice-Hall, 1980, p. 153.

The symbol is viewed as a basic human characteristic necessary to the development of the individual's self-concept and social identity. Symbols are used to represent objects and ideas. Symbols are arbitrarily assigned and are agreed to by members of a particular culture. Words, many visual graphics, are symbols. Symbols are used to order our experience and form the basis of abstract thought.

Through symbol use man is able to displace and decenter. Displacement allows one to refer to things not immediately present in time or space. Decentering is the process made possible by speech communication whereby the child forms the concept of self by progressive differentiation from objects and other people. As we mature, we can then take an objective point of view as opposed to an egocentric position.[81] "The capacity for decentering potentiates...flexibility in adaptation and control of...self and...environment."[82] It is proposed that disorders of symbolic thought result in difficulties with self-concept (aside from academic failure), social relationships and flexible cognitive development.

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[81] H. Werner and B. Kaplan. Symbol formation: An organismic Developmental Approach to Language and the Expression of Thought. New York: Wiley and Sons, 1963.

[82] Frank E. X. Dance, "Speech Communication as the Sign of Mankind." In Symposium on Species Specificity of Language." The Great Ideas Today. Chicago: 1975, pp. 40-57

Language. Developmental delays or abnormalities in the acquisition of language will impact later functioning. Deficits in early experience can be hypothesized to affect deep structure semantics. Chomsky's concept of "genetic program" for syntactical structures may have bearing on known transmission of language/ reading problems.

Spoken language is regarded as central to other forms of language - reading and writing. The auditory modality is critical to internal and external vigilance (orientation in environment) as well as to language development. Auditory deficiencies of any type during critical periods of language acquisition will most likely result in some degree of dysfunction in spoken language, which in turn, may hinder achievement in reading and written language. Vygotsky identifies inner speech as the process through which thought becomes spoken language. In this context one can identify many possible areas of difficulty as thought is transformed into spoken language and vice versa. Any type of disruption along this "pathway" could result in problems with semantic (meaningful) conceptualization, relationships of lexical units, word meanings, syntactical (word order relationships) and morphological (meaningful word parts, e.g., endings) aspects and phonological sound units encoding and decoding. Prosody and memory functions also interact here.

One can note the close relationship between the functions of speech communication (link with environment, mentation and self-regulation of behavior) and learning. Symbolic behavior is generated in terms of the self initially, serving to identify the self and to provide social and cultural bonds with the environment. Cognitive development is served by communication with ourselves. Inner spoken language is the seat of our regulatory behavior. Those of us working with the learning disabled adolescent or adult quickly recognize problems with self-concept, social behavior, cognitive skills and self-monitoring. Learning disabilities/language disorders therefore affect a person's communicative behavior in a very broad sense.

Implications and Empirical Evidence

Learning disability at adulthood is complex. The differentiation of the underlining disorder, elaborate (and often counterproductive) compensatory mechanisms and emotional responses to particular learning tasks presents a sizeable challenge to the adult educator. One of the clearest pictures of the problem can be gained by careful appraisal of the individual's spoken language/communication behavior.

Two powerful approaches - language therapy and development of cognitive strategies implies a heavy reliance on inner speech (communication with one's self) and speech communication with the teacher. Thus, the development of effective cognitive strategies is intricately bound to speech communication in both conceptualization and in practice.

Much of the recent interest in language as central to learning disabilities must be credited to Wiig and Semel. Both of their major works in the field (1976, 1980) extend invaluable theories, research and treatment strategies from children to adolescence. Their statements about the longitudinal pervasiveness of language disabilities give credibility to the reality of the adult learning disabled.

> "The assumption that the learning disabled child will outgrow his eficits and be normal as an adolescent and young adult is proving erroneous. Language deficits which begin early in life...tend to come out when new circumstances - perhaps a new form of study, a new job, or a promotion - place different and unexpected demands upon language processing and use in speaking or writing. Some learning disabled people may learn to skillfully avoid situations which tax their basic incapacities. Others may be open to failure all their lives. Some learn to compensate and to use adaptive strategies to find success in spite of their deficits. Some never acquire compensatory strategies and may need assistance in developing adaptive and efficient techniques for compensation even once they are past school age.[83]

In almost every instance, the specific language deficits discussed by Wiig and Semel are present in adults, ranging from subtle symptoms to severe handicaps. Morphological, syntactical and semantic deviations in adult spoken language have been observed in clinical, educational and job training settings. Some broad generalizations concerning language disorders in learning disabled adults are listed below. These statements are based on an informal, post hoc survey of approximately 150 ALDs served (diagnosis and educational therapy) in a clinical setting, including this special demonstration project for Adult Basic Education in Colorado.

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[83] Elisabeth Wiig and Eleanor Semel. Language Assessment and Intervention for the Learning Disabled. Columbus: Charles Merrill, 1980, pp. 21-22.

1. The presenting problem for over 95% of these individuals was reading (and writing, in less severe cases).
2. Many had pronounced auditory deficiencies in memory and phonological reception and production.
3. A higher incidence of articulation and fluency problems

Terminology

Circumlocution: Using many words to achieve a point in speech communication (oral or written); e.g., "wordiness" (Sometimes the point is never made despite great effort).
Fluency: Ease of production of speech (and in oral reading) observable in smoothness and proper phrasing.
Morphology: Basic structure of a language expressed by word formation, grammatical tense. (Common problems are with word endings).
Phonology: Sound symbols and their combinations.
Prosody: The melodic, organizational pattern of spoken language affected by pitch, stress, intonation...
Semantic: Meaning system of a language - words and sentences and conceptual relationship to world.
Syntax: Conventional structure of a language expressed in arrangement of words to show relationship between words.

existed than among the general population.

4. The majority exhibited some form of spoken language expression problems in the areas of formulation - circumlocution, syntactical and morphological errors.
5. Many of those who superficially appeared to be highly verbal had underlying problems, noted by unusual fluency and prosody patterns in spoken language.
6. A small percentage had primarily visual problems, and were able to use strong language abilities in educational therapy to successfully compensate for their problems.
7. Over half of this population had both visual and auditory problems, with auditory difficulties clearly the most debilitating in terms of treatment.
8. Nearly all of these adults had some degree of problem with self-concept and social relationships, although approximately half of them appeared to be overtly stable and reasonably well-adjusted.
9. Most had difficulty with symbolic reference at abstract levels.
10. Flexible cognitive strategies, effective self-monitoring and full awareness of the problem were poor before treatment in all cases.

Summary

The premise of this chapter is that language is the uniquely human, highly complex system of communication in man. An attempt has been made to sample background material from a variety of disciplines that bear on learning disabilities as a true language disorder. The primary position here has been taken from a specific speech communication orientation that regards spoken language as a central to all human communication.

By examining language from a speech communication framework, one can gain a greater appreciation of the comprehensiveness of a language disorder. This position implies that we need to consider far more than academic skills remediation in dealing with the learning disabled individual.

A key factor in understanding language disorders lies in understanding normal language acquisition. Comparative studies reveal that language development of the learning disabled child is qualitatively different, showing deviance in both competence and production. (Trantham and Pedersen, 1976; Menyuk, 1979; Bloom and Lahey, 1980). Furthermore, the very strong case for learning disabilities (dyslexia) as a verbal processing deficit as set forth in Vellution's work (1979) must be takn seriously. The learning disability teacher (or the adult educator) is rarely provided with a strong background in language by undergraduate or graduate level training programs (Berry, 1980).

Discussion of learning disabilities in adults and the results of an informal survey offer evidence that language based disorders continue to persist throughout life. The underlying nature of these problems remains similar to that observed in children; however, the overt symptoms become more embedded in the individual's total communicative behavior. Extensive experience with adults has provided evidence that spoken language, however imperfect, is the strongest learning ability. In the authors opinion, effective treatment must be provided on this basis within a therapeutic situation that considers the individual's global communication skills.

CHAPTER VIII

DIAGNOSTIC EVALUATION

PSYCHOEDUCATIONAL TESTING

Referral and general evaluation procedures for the project were outlined in Chapter I. The personal background interview and test outcomes were presented in Figure 1, page 9. The Woodcock-Johnson Psycho-Educational Battery was the primary diagnostic tool used in the project. Procedures for its administration with individual students were listed on page 10 of this report.

In addition, informal assessment was conducted to determine possible existence of auditory or visual acuity problems. Visual tracking was also checked informally. If time had permitted, the Auditory and Visual Acuity sections from the London Procedure and the Jordan Visual Screening Test would have been administered to each student.

TEST BACKGROUND

The Woodcock-Johnson Psycho-Educational Battery (WJPEB) published in 1977 by Teaching Resources Corporation represents a major innovation in the educational and psychological area of diagnostic testing. The normative data is based on a very large sample (nearly 5,000) representing 42 communities throughout the country of all ages and both sexes from a variety of occupational types and socio-economic groups. The WJPEB is the first major comprehensive diagnostic battery that has norms from pre-school through age 80. Thus, this relatively new instrument is the most effective test battery currently available for the determination and diagnosis of learning disability in adults.

Test reliability, a statistical measure of the consistency of individuals is good. Using split-half correlations and the Spearman-Brown formula, generally strong reliability coefficients are reported in the Technical Manual. All cluster or general subject area reliabilities are above .90, and all reliabilities on the adult sample are very high, .95 and above. The reliability factor is an important consideration in how much confidence can be placed in a test. Many achievement tests as used with adults in educational settings yield poor reliability, especially those with a multiple choice format.

The validity of a test refers to what the test measures and how well it does so. The title of a test or subtest is usually too general to denote what behavior is actually being tested. Furthermore, human information processing and thinking skills are so complex that it is almost impossible to isolate a specific behavior or skill and measure it precisely. This factor of complexity has always resulted in controversy in the field of learning disabilities. For example, a subtest of visual perception may actually involve many other processes, too, such as memory, auditory rehearsal, and higher level thinking skills.

Because of these inherent problems with the measurement of any learning abilities and disabilities, scores on a particular test always need to be compared with some other reference point. Other references may include other tests, observable behavior in study situations and professional experience judgement. In the case of adults, self-reports are also very important considerations.

One common method that test developers use to establish validity is to compare their test with other published tests that claim to measure similar functions. These correlations should be only moderately high - high enough to demonstrate that the tests measure similar behaviors, but not so high that the tests are identical (in which case there would be no purpose for the new test).

The WJPEB's concurrent validity statistics were derived from correlations with other widely used tests of intelligence and academic achievement. Samples were taken from third, fifth and twelfth graders. The results of these studies appear to yield appropriate validity for these three age groups of school students. However, no validity studies were conducted for adults.

The adult norming sample was 448, with 351 people ages 20-64 and 97 people 65 or over. The final Technical Manual was not available for further analysis of the adult norm population. It can be surmised that very few individuals in the sample had learning problems; many probably had college educations. Therefore, it is logical to assume that the scores of an ALD population would generally be low in comparison to a normal adult population sample.

Predictive validity is stated as a major function of the WJPEB. The academic aptitude scores attempt to predict at what skills levels a person can be expected to be performing at. This type of score proved useful with ALD. In the majority of cases, the LD individual's actual achievement level was far below his/her aptitude, or potential. This logical expectation was well substantiated by the test.

Test Content

The Woodcock-Johnson Psycho-educational Battery is a comprehensive set of 27 tests that measure cognitive abilities, scholastic aptitudes, achievement, and interests at preschool through adult levels. The tests are administered orally on a one-to-one basis, permitting maximum flexibility in tailoring the Battery to the subject's range of functioning and the examiner's specific test objectives.

The Battery's 27 tests are divided into three parts: Tests of Cognitive Ability, Tests of Achievement, and Tests of Interest level. The scores from these tests can be "clustered" in various ways to assess competence in broad skill areas. The Tests of Interest Level were not used in the project because they have not been found useful.

Although tests are the basic components of the Battery, clusters of tests provide the primary basis for battery interpretation. Reading ability, for example, is expressed as a cluster score representing three separate components of reading: Letter-Word Identification, Word Attack and Passage Comprehension. Similarly, two aspects of memory ability - Memory for Sentences and Numbers Reversed - are combined to arrive at the Memory Cluster Score. The clusters in Part One contribute to the evaluation of broad cognitive ability, specific cognitive factors, and scholastic aptitudes; those in Part Two and Part Three focus on achievement and interest level, repectively.

Cluster Scores cover the following areas:

- Broad Cognitive Ability
    - Full Scale

- Cognitive Factors
    - Verbal Ability
    - Reasoning
    - Perceptual Speed
    - Memory

- Scholastic Aptitudes
  - Reading
  - Mathematics
  - Written Language
  - Knowledge

- Achievement
  - Reading
  - Mathematics
  - Written Language
  - Knowledge
  - Skills

Individual subtests are:

Part I: Tests of Cognitive Ability

- Picture Vocabulary
- Spatial Relations
- Memory for Sentences
- Visual-Auditory Learning
- Blending
- Quantitative Concepts
- Visual Matching
- Antonyms-Synonyms
- Analysis-Synthesis
- Numbers Reversed
- Concept Formation
- Analogies

Part II: Tests of Achievement

- Reading
  - Letter-Word Identification
  - Word Attack
  - Passage Comprehension

- Mathematics
  - Calculation
  - Applied Problems

- Written Language
  - Dictation
  - Proofing

Knowledge
    Science
    Social Studies
    Humanities

Student Data: Cognitive Abilities

The Broad Cognitive score is a composite of all 12 subtests in Part I. This global score did not prove to be comparable to an I.Q. score for adults with learning disabilities. The problem areas greatly reduced the total cognitive score. Thus, by looking only at the broad cognitive score for any individual, one cannot gain a valid measure of intellectual potential.

The broad cognitive scores reported in grade levels for all 21 persons in this project that received this test ranged from 1.6 to 12.9 with an average of 6.4. Figure 4 indicated that there were 16 students whose primary problem was the learning disability. Fifteen of these received the WJPEB. Their composite scores ranged from 4.4 to 12.9, with a mean average of 7.4.

A more appropriate use of scores from the cognitive tests is found by comparing the four cluster areas; Verbal Ability, Reasoning, Perception (visual only) and Memory (short-term). The following table lists scores for individual students in terms of grade-month levels for each of these four areas.

Table 14

Performance of 15 LD Adults in Four Major Cognitive Processing Areas

Student	Verbal Ability	Reasoning	Perception	Memory
1	8.4	12.9	6.0	7.8
2	8.6	12.9	9.0	4.2
3	12.9	5.5	3.2	2.3
4	11.6	8.2	6.6	12.9
5	8.2	11.5	10.0	10.4
6	8.8	4.0	1.0	3.5
7	12.9	12.9	9.6	10.4
8	12.9	1.2	2.6	1.7
9	9.4	9.2	4.0	4.2
10	12.9	6.8	4.5	6.4
11	8.0	5.2	3.3	2.8
12	8.0	4.6	1.6	10.0
13	8.8	4.6	4.2	4.2
14	5.9	3.9	5.9	2.0
15	12.9	4.3	2.0	3.1
Mean Averages	10.0	7.2	4.9	5.7

Generally, abilities were strongest in the verbal area and weakest in perception and memory. Reasoning skills were quite good in most students. The Verbal Ability cluster was composed of Picture Vocabulary and Antonyms - Synonyms. Many students were noted to have some degree of problem in both of these subtests in retrieving specific words from memory. In all cases their knowledge of object and word concepts was higher than their actual test scores. Still, performance on this part of the test was strong.

Based on this sample, one may conclude that LD adults have adequate knowledge of vocabulary - word meanings. It must be recognized that these tests do not reflect overall language abilities, merely word meanings. Hence, a student may have severe linguistic deficits that are not measured by vocabulary tests. This generalization is reported also by Wiig and Semel (1976,1980) in LD children and adolescents.

The two Reasoning subtests - (Concept Formation and Analysis-Synthesis) were not found to yield highly accurate results with adults. Both tasks involved abstract thinking of a kind that most adults do not encounter in their lives. In fact, the color symbols on Analysis-Synthesis are confusing to many adults because they do not match the real world of artistic color. Both subtests are presented as puzzles. Through experience with this test, it has been found that LD children generally perform better on the test than do LD adults. Despite these criticisms, the examiner does learn about the adult's use of cognitive strategies. Signs of rigid, inflexible thinking are often noted.

The Perception cluster was the weakest area for over half of the students. The two subtests here were both visual and timed. It is felt that the time factor was most responsible for the low scores. Rather than a structural deficiency in vision, a factor of inefficiency is found in visual tasks.

The LD student is often slower in matching, manipulating and coding visual information. However, accuracy of responses was usually high.

The Memory cluster represents short-term memory of auditory input. Performance on Memory for Sentences was generally adequate. Most students seemed to recall these items by relying on sentence meaning. In other words, errors were not random; they reflected sensible semantic substitutions.

The Numbers Reversed subtest is a difficult task since we are seldom (if ever) required to repeat numbers backwards from the way we see or hear them. To do well on this test, one must form a visual image of the numbers he hears. Many non-LD individuals use this strategy automatically to deal with this type of recoding task. It is interesting to note that only 3 of the 15 LD students used this strategy, and two of these had reading levels around 6.0. None of the "non-readers" used a successful strategy on this test.

Another feature of the WJPEB is a set of aptitude scores. Aptitude scores in the three major academic areas are listed for the 15 LD students in Table 15. Aptitude is generally considered to be a measure of an individual's underlying or potential ability in a particular skill area. The Reading Aptitude cluster is comprised of subtests that do tap skills involved in reading, although not the most critical variables, in the author's opinion. Some doubts are cast regarding the validity of the Math and the Written Language Aptitude clusters due to test construction.

As a whole, the aptitude scores of these students as measured by the WJPEB are quite good, particularly in reading. Despite the fact that all of these students had significant processing problems, they showed at least satisfactory abilities to learn. Thus, learning problems cannot be attributed to a lack of intellectual capability. (Those of the 21 students receiving this test who were somewhat retarded had far lower aptitude scores than the 15 LD students).

One of the most interesting and revealing subtests of the WJPEB is Visual-Auditory Learning. The student is asked to rapidly learn words for pictoral symbols, and then use these symbols to "read" sentences. The subtest is designed to measure visual-auditory integration. It appears, however, that many memory encoding and linguistic factors are involved. Indicators of "cognitive overloading" were noted in some students when their functioning broke down completely. Factors of language deficits are discovered with intransitive verbs, word endings and syntax. Nearly all LD students had trouble with prepositions, although the symbols show these spatial relationships quite clearly. Indicators of reading comprehension problems can also be predicted from performance on this subtest.

Table 15

Aptitude Cluster Scores in Three Academic Areas for 15 Learning Disabled Adults

Student	Reading	Math	Written Language
1	12.9	10.5	8.6
2	10.5	11.8	8.2
3	12.8	8.0	5.6
4	9.5	11.8	11.4
5	11.4	12.9	11.9
6	11.0	5.7	4.0
7	12.9	12.9	7.5
8	11.4	6.8	4.0
9	11.9	7.6	7.4
10	12.9	9.0	8.0
11	6.1	7.3	5.4
12	12.9	8.3	5.5
13	10.9	7.6	5.8
14	6.5	6.8	5.7
15	7.0	6.4	7.4
Mean Averages	10.7	8.8	7.0

Student Data: Achievement

The achievement scores on the WJPEB do appear to be valid measures of skills in the academic areas. (Scores here correlate quite well with other individual achievement tests. Scores also roughly match grade levels of instructional reading materials).

Table 16 shows reading aptitudes and reading achievement scores. The Visual-Auditory subtest scores mentioned above (part of the aptitude scores) is also listed for each of the 15 students.

One can see that those students who have some functional reading skills (3rd-6th grade level) scored considerably higher on the Auditory-Visual Learning subtest than those students who were basically illiterate (1st-2nd grade level). Thus, this particular subtest does appear to be correlated with reading skills. Furthermore, the case for disability as linguistic deficiency is tentatively supported by this data.

Table 16

Reading Aptitude and Achievement Scores for 15 ALD

Student	Reading Aptitude	Reading Achievement	Discrepancy	Aud.-Vis. Subtest Score
1	12.9	5.6	-7.3	12.9
2	10.5	1.8	-8.7	1.5
3	12.8	1.2	-11.6	2.5
4	9.5	3.3	-6.2	1.0
5	11.4	6.4	-5.0	5.5
6	11.0	1.8	-9.2	5.0
7	12.9	6.6	-6.3	12.9
8	11.4	1.8	-9.6	1.0
9	11.9	1.6	-10.3	3.0
10	12.9	4.9	-8.0	6.0
11	6.1	1.0	-5.1	1.0
12	12.9	3.4	-9.5	3.0
13	10.9	2.3	-8.6	1.5
14	6.5	1.8	-4.7	1.0
15	7.0	2.8	-4.2	1.0
Mean Average	10.7	3.0	-7.6	3.9

Discrepancy scores have been listed in Table 16. Discrepancy refers to the difference between aptitude and achievement. The WJPEB provides a sophisticated procedure for computing discrepancy factors. In this table, simple subtraction was used to show the discrepancy between underlying ability and skills.

The reading achievement cluster consisted of the three subtests - Letter-Word Identification (pronunciation of single words); Word Attack (knowledge of phonics and word structure); and Passage Comprehension (supplying missing words in sentences and short paragraphs).

Reading Achievement scores are shown in Table 17.

Table 17

Reading Achievement Scores for 15 ALD

Student	Letter-Word Identification	Word Attack	Passage Comprehension	Composite
1	6.0	4.0	10.0	5.6
2	2.0	1.5	2.0	1.8
3	1.0	2.0	2.0	1.2
4	3.5	2.5	4.5	3.3
5	9.0	7.5	6.5	6.4
6	1.7	1.9	1.8	1.8
7	6.0	8.0	10.5	6.6
8	1.5	1.5	2.0	1.8
9	2.0	1.5	2.5	1.6
10	4.5	2.5	12.9	4.9
11	1.0	1.0	2.0	1.0
12	5.0	2.5	7.0	3.4
13	1.5	2.5	2.5	2.3
14	2.0	1.5	2.0	1.8
15	2.0	2.0	5.5	2.8
Mean Averages	3.2	2.8	4.9	3.0

A score of 1.8 on Letter-Word Identification is attained by correctly identifying certain letters of the alphabet and pronouncing the words, 'is', 'go' and 'to'. The Word Attack subtest measured phonics and word structure skills using non-semantic syllables. Three correct items yielded a 2.0 grade score.

Comparing the three subtest scores, an important pattern is discovered. With few exceptions, comprehension is far stronger than word skills. An extreme case is Student #10 who somehow used context skills and guessed well. This young man comprehended material at a college level when his isolated word skills were only at 2nd-4th grade level. His very strong linguistic (language) abilities (Aptitude Score = 12.9) enabled him to make reasonably accurate predictions of the meaning of material that greatly exceeded his actual reading level. (This individual's problem was visual dyslexia, and his progress was very rapid).

Tables 18 and 19 show aptitude, achievement and discrepancies for Mathematics and Written Language. The discrepancies for these 15 ALD were far less in mathematics (-2.6) than in reading (average - 7.6). In other words, achievement in math is not limited by LD nearly as much as in reading. (Only one of the twenty-five students in the project had a primary deficit in math. She was not given the WJPEB).

Table 18

Aptitude and Achievement Levels for 15 ALD in Mathematics

Student	Aptitude	Achievement	Discrepancy
1	10.5	7.8	-2.7
2	11.8	5.8	-6.0
3	8.0	6.5	-1.5
4	11.8	6.6	-5.2
5	12.9	8.8	-4.1
6	5.7	2.8	-2.9
7	12.9	6.5	-6.4
8	6.8	2.4	-4.4
9	7.6	6.4	-1.2
10	9.0	7.2	-1.8
11	7.3	7.3	0
12	8.3	5.5	-2.8
13	7.6	5.2	-2,4
14	6.8	6.3	-0.3
15	6.4	8.4	+2.0
Mean Averages	8.8	6.2	-2.6

Table 19

Aptitude and Achievement Levels for 15 ALD in Written Language

Student	Aptitude	Achievement	Discrepancy
1	8.6	6.7	-1.9
2	8.2	1.8	-6.4
3	5.6	1.8	-3.8
4	11.4	3.2	-8.2
5	11.9	4.5	-7.4
6	4.0	2.3	-1.7
7	5.7	2.2	-3.5
8	4.0	2.0	-2.0
9	7.4	2.7	-4.7
10	8.0	4.5	-3.5
11	5.4	1.1	-4.3
12	5.5	3.2	-2.3
13	5.8	2.2	-3.6
14	5.7	3.2	-1.5
15	7.4	1.7	-5.7
Mean Averages	6.9	2.8	-4.0

A different pattern would have occurred, however, if the tests had included word problems that the student was required to read.

Written language scores are reported in Table 19. There is some question about the test's validity in this area. Achievement scores were based on a dictation test (spelling words and a few basic grammatical concepts and symbols) and on a proofreading test which consisted of errors in spelling, usage and capitalization/punctuation. Scores ranged from 1.1 - 6.7, with an average of 2.8.

No student was able to spell at a higher level than he/she could read. Several students who had received instruction in proofreading did quite well on that subtest. Those who were functional non-readers were not given the proofreading test.

Summary

The WJPEB did prove highly useful in the diagnosis of LD in adults. There is some degree of question about the validity of certain procedures, subtests and cluster scores with adults. However, the battery did a generally good job of differentiating primary LD problems from other types of learning problems. Discrepancy scores were very helpful in determining the severity of reading disability.

In conclusion, the WJPEB appears to be the most comprehensive, reliable and appropriately normed tool for the diagnosis of ALD. As with any individual test of information processing, the value of the test results depend heavily on the diagnostician's observations and interpretations of strategies used by the student during testing.

CHAPTER IX

EDUCATIONAL THERAPY FOR ADULTS

This chapter describes the heart of this project's services—direct remedial work with students. The contents of this chapter are organized into four sections. The first section states the rationale for the approach and sets the goals for educational therapy. Against this background, a theoretical and practical model of adult learning disabilities developed by the report author is presented. This model was approximated with all students receiving treatment through this project. The third section delineates some general principles and guidelines for effective educational therapy. Finally, major remedial materials used with the students are described.

Rationale and Goals of Educational Therapy

The rational for educational therapy which is based on a clinical foundation makes several assumptions about ALD. Some of these assumptions will be agreed with by the reader; others may not be. These assumptions are:

1. *If it (methods, materials) hasn't worked before, there is no reason to expect that it will now.* The implications here are that the student has already had instruction and often tutoring from traditional educational frameworks that have not been very effective. More of the same (hierarchy of academic skills, extensive drill, etc.) will probably result in only minimal gains.

2. *Material and skills cannot be "taught to" these students.* From the cognitive viewpoint taken by the report author, the student must be *the* active, involved processor of his own learning. If the student will not or cannot take this active role, success will be seriously limited. Of course, a skillful and sensitive teacher is a prime facilitator. This philosophy is also held by Weisel. She states the position well:

> We can share information. We can help students by setting up the right learning conditions, to our best possible knowledge, to meet individual needs. We can care about our students and learn from them, but *we cannot teach them. Adults with learning problems can only learn from learning.*[84]

This active involvement applies not only to immediate tasks, but also to long-range goal planning within an educational program.

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[84] ~~Laura~~ Weisel, "Committee Chairpersons Comments", Adult Learning Problem Notes, January, 1980, p.3.

3. Educational therapy is best accomplished on a one-to-one basis. No way has yet been found by this LD teacher to foster the therapeutic, intense learning atmosphere with more than one student. Several attempts were made within this project to conduct sessions with more than one student. However, these efforts were clearly less successful than individual sessions. Learning problems themselves are too idiosyncratic in adults to assume much commonality even if instructional levels and deficit areas are similar. Furthermore, emotional sensitivity to problems is usually very great. Privacy is also an important correlate to the remedial process. Competition between ALD is never in order. Teachers need to be aware of and prevent any situation that might inadvertently contribute to a sense of competition.

4. Remediation entails helping the learner develop more effective ways of dealing with information (processing) so that academic learning becomes possible. If underlying neurological structures of perception, memory, etc. do exist, they cannot be "changed" in the adult. Compensation (defined here as avoiding or bypassing problem areas by substitution)[85] is not a part of remediation, although helping a student learn how to compensate may be very important in certain life and job situations

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[85] Example of remediation versus compensation: Recorded tapes that serve as the primary source of receiving information from printed material are compensatory devices. Recorded tapes that a student reads along with to develop fluency are remedial techniques.

5. *Greater effectiveness in cognitive strategies can be developed by adults with LD enabling them to make significant progress with academic and general life skills*. The success of building more efficient, more flexible cognitive approaches depends almost entirely upon language and communication skills; (i.e., "inner-speech" in intrapersonal communication for problem solving, word decoding and encoding, self-monitoring and interpersonal communication with the teacher - as explained in Chapter VII).

   The phenomenon of "cognitive overload" as presented by Early refers to inefficient, energy consuming strategies of LD learners that detract from the goals of tasks.[86] A certain amount of cognitive overload will always occur in ALD as they are not by nature of their condition automatic processors of information. Therapy can help improve efficiency of strategies, thus reducing the factor of "overloading." However, as lower level skills become more automatized, the learning of higher level skills again produces overload. The cycle is continous, but the learner does progress.

6. *The great majority of true, pervasive learning disabilities in adults are linguistic* (and hence, auditory-verbal) *in nature*. *All severe, profound learning disabilities are language disorders*. This statement is based on recent work in the

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[86] George Early. "Learning Disabilities: An Information-Processing Model." *School Psychology Digest*, Vol.5,1976,pp.17-18.

field of learning disabilities and on personal experience with LD individuals of all ages. Two of the most comprehensive, recent research and theoretical reviews have been accomplished by Wiig and Semel (1976) and Vellutino (1979). Wiig and Semel provide thorough evidence of language disabilities as well as remediation procedures (1980). Vellutino evaluates an incredible magnitude of LD research and concludes that dylexia (reading disability) is caused by deficits in verbal processing. He states:

> Vision and speech articulation are... involved in reading but are not essential to it; linguistic ability and the ability to relate linquistic symbols to coded representations are essential to reading.[87]

From a longitudinal perspective, learning disabilities in children may be primarily attentional or visual or visual-motor. These visual-motor problems appear to be attributable to maturational lag. Problems with visual processing and attention certainly present problems for adult learners, but they seldom constitute the actual learning disability. One small piece of evidence from this project's data is found in the young man (Student #10 - Chapter VIII Tables) with only visual dyslexia and strong language abilities who scored at a college level in reading comprehension despite pronounced visual perceptual confusions. Individuals with primary visual problems respond far more rapidly and more completely to educational therapy. Those with primary auditory-linguistic dyslexia (frequently complicated by visual problems) always appear to be limited in the extent of academic progress they can make. Strong language abilities and strategies can overcome visual difficulties; strong visual abilities cannot overcome linguistic deficits.

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[87] Frank Vellutino. Dyslexia: Theory and Research. Cambridge, Mass.: MIT Press, 1979, p. 357.

7. There is not time in the adult's life to learn every sequential skill or bit of information. The teacher must concentrate on 'learning to learn.' Transfer of learning must be carefully planned by the teacher. It will not happen automatically. Among the many counter-productive compensatory strategies that ALD use, a typical device is to learn isolated ("splinter") skills that only work in one (or a few) given contexts. These skills are typically learned in the course of schooling to meet the teacher's expectations or to avoid embarrassment. A specific phonics decoding strategy for word identification is a splinter skill if it only works in a list of words. The strategy reflects true learning if it transfers to sentence reading, and paragraph reading, if it goes to the grocery store and to the bank, etc.

8. "Demystifying" the English language is a critical goal of educational therapy for adults. Grush reports that English is the most "erratic and irregular" language with only 20% regularity.[88] This refers to the fact that sounds (phonemes) and letters (graphemes) do not match consistently. There are at least 45 phonemes and 279 graphemes[89] that have been identified by linguists. Many ALD in their struggles to acquire reading and writing skills sense the complexity of our language. The more information that the learner can acquire and apply about the language, the more strategies he will have at his command. Also, knowledge of language (metalinguistics) will enhance feelings of control and confidence. This approach implies that the teacher must have knowledge of language.

9. Language development must be a major part of reading and writing remediation. A case for the centrality of spoken language was presented in Chapter VII. If understanding and use of word endings denoting grammatical relationships (morphological factors), word order denoting meaning (syntactical factors) or word meanings (semantic factors) are poor in spoken language, reading will not have a good foundation. This does not imply that the teacher must work on oral ex-

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[88] Helen Grush. Games 'n' Grids (Manual) Lexington, Mass.: LEAD Educational Resources, 1980, p. 26.

[89] Ibid., p. 25.

pression before proceeding to reading; rather, spoken language development and reading development are accomplished simultaneously. Student generation of oral sentences, language experience stories, cloze procedures and sentence building cards are all good language/reading techniques. The closer the adult's spoken language and the materials he uses to read match each other, the more successful reading will be.

10. The relationship between the student and the teacher needs to be therapeutic. Good counseling techniques are helpful; mutual trust and respect are vital. Given the LD adult's often negative past experience with teachers, the adult educator must be perceived as human by the student. A good personal relationship between student and teacher is crucial to successful learning.

A Model of Adult Learning Disabilities

The following model presented in chart form is developmental in its conceptualization. It reflects the changing nature of LD as the individual matures. This framework gives practical substance to the ideas about communication and language presented earlier.

A RESPONSE LEVELS MODEL APPLIED TO ADULTS WITH LEARNING DISABILITIES

	LEVELS	PROCESSES	Dev. Age Correlate
VI.	COMMUNICATION	EXPRESSION	12-Adult
V.	SYNTHESIS	INTEGRATION	10-Adult
IV.	UNDERSTANDING	RE-COGNITION	8-Adult
III.	ASSOCIATION	MEMORY	2-9 years
II.	DIFFERENTIATION/ANALYSIS	PERCEPTION	1-6 years
I.	SENSORY ORIENTATION	ATTENTION	B-18 mos.

This model has been adapted and revised from age related LD models proposed by Corrine Kass, Ph. D. (Univ. of Arizona) and James DeRuiter, Ph. D. (Univ. of No. Colorado). The six levels represent tasks (see Figure 6) that the learner must negotiate in dealing with information either from the environment generally or in a learning situation. Corresponding processes are what the learner actually does to meet the demands of the task. The ages attached to these levels indicate the primary focus of learning at that particular stage. Levels have been arranged with I at the bottom and VI at the top to depict the hierarchical nature of learning. Thus, if there is a problem at level I or II, the foundation for higher level learning is weaker.

Deficits in information processing with adults are usually found at several of these levels. On the final individual Progress and Growth Charts (Appendix D) strengths and weaknesses at each of the levels are noted. Communication is the highest level. Deficits at any lower levels always affect communication. This model is consonant with the orientation of adult learning disabilities as communication/language disorders presented in Chapter VII.

A very important remediation philosophy is taken from this task response levels model. The adult with learning problems is past the primary focus age of the first three levels of learning. His/her cognitive modes of thought are above attention, perception and memory despite the existence of difficulties with these processes. Therefore, strategies for remediation attempting to improve processing at these levels must be generated from the highest three levels.

The theoretical model has been directly extended to a practical base through the delineation of characteristics and treatment in Figure 6. These lists are by no means inclusive, and offer only samples of characteristics and treatment approaches.

Figure 6

A RESPONSE LEVELS MODEL APPLIED TO ADULTS WITH LEARNING DISABILITIES

	LEVELS	PROCESSES	Dev. Age Correlates
III.	ASSOCIATION Learned connections between labels and objects; symbol representations; simple definitions of objects and activities	MEMORY The process by which information is briefly held and organized (short-term memory), stored and then retrieved for recall (long-term memory)	2-9 years
II.	DIFFERENTIATION/ANALYSIS Discrimination of likenesses and differences; awareness of temporal sequences and visual arrangements	PERCEPTION The process through which sensory characteristics of objects and symbols are initially analyzed: discriminated, recognized, compared and patterned	1-6 years
I.	SENSORY ORIENTATION Physiological awareness of the individual to stimuli in the environment	ATTENTION The process of conscious awareness focused information to be dealt with; the process of maintaining or shifting awareness to meet task demands	B-18 mos.

Figure 6

A RESPONSE LEVELS MODEL APPLIED TO ADULTS WITH LEARNING DISABILITIES

	LEVELS	PROCESSES	Dev. Age Correlates
VI.	COMMUNICATION Formulation and delivery of messages to others conveying meaningful information; receiving and interpreting messages from others; assumption of personal responsibility for messages	EXPRESSION The process by which integrated meanings are sent to others and received from others in a personalized manner	12-Adult
V.	SYNTHESIS Unification of processes I-IV so that responses become automatic and internalized, freeing the individual to deal with more complex cognitive thought	INTEGRATION The process through which the rudimentary mechanics of a task are patterned as habits, no longer requiring conscious, mediated effort; the process allowing for monitoring of one's own responses	10-Adult
IV.	UNDERSTANDING Comprehension of semantic and structural meanings; formation of concepts and applications; generation of logical thought (both inductive and deductive)	RE-COGNITION The process of recognizing and manipulating previous learning and relating it to present situations; the process of interpreting, applying and inferring	8-Adult

Figure 7

CHARACTERISTICS & TREATMENT OF ADULT LEARNING DISABILITIES AT VARIOUS LEVELS OF PROCESSING

	PROCESS	COMMON DEFICIT CHARACTERISTICS	TREATMENT APPROACH
III.	MEMORY	STM: Follows directions poorly. Extremely poor rote memory. LTM: Pronounced difficulty retaining information. Noticeable problem with retrieval of specific words.	Awareness Visual imagery Rehearsal strategies Cue systems Direct compensation
II.	PERCEPTION	Persistent visual confusions (written symbols inverted, reversed, transposed, ommitted, added, substituted). Poor auditory or kinesthetic discrimination and sequencing. Possible minor speech and pronunciation problems. Noticeably poor motor coordination.	Awareness Develop self-monitoring Reduce anxiety level Learn strategies Increase language predic tability skills
I.	ATTENTION	Poor concentration, easily distracted. Rapid fatigue. Low level discrimination problems. Disorganization and disorientation. Rigidity. Impulsivity or passivity.	Awareness of problem Modify learning environment Stucture tasks Frequent activity change Warm-up period Learning sets

Figure 7

CHARACTERISTICS & TREATMENT OF ADULT LEARNING DISABILITIES AT VARIOUS LEVELS OF PROCESSING

	PROCESS	COMMON DEFICIT CHARACTERISTICS	TREATMENT APPROACH
VI.	EXPRESSION	Fails to take personal responsibility for learning. Speech or gestures inappropriate to situation. Frequent interpersonal problems. Misinterpretation of others' motives resulting in anger or over-sensitivity.	Awareness Counselling Role playing simulations
V.	INTEGRATION	Inability to monitor own responses. Disfluency in speech, reading, writing. "Cognitive overloading." Poor coordination of two or more modalities causing break-down in any academic task.	Teach self-monitoring skills through direct, personalized cues systems and phase out gradually. Don't insist on accuracy of initial responses. Develop multisensory and cognitive strategies. Use distributed practice.
IV.	RE-COGNITION	Language difficulties-semantic and structural. Poor judgement of actions and consequences which may result in inappropriate socal behavior. Trouble solving personal or work problems.	Strengthen language skills. Model mediation strategies. Counselling Role playing

Basic Principles of Adult Remediation

The following guidelines were derived from experience with ALD. They are organized in outline form around four topics of concern.

A. Therapeutic Qualities

1. Provide therapeutic atmosphere - privacy, active listening, honest reflection.
2. Develop empathy, not sympathy, toward students' problems.
3. Maintain intensity, enthusiasm and reality during sessions.
4. Use sense of humor to ease tensions and to provide breaks in intense concentration.
5. Be realistic with praise, statements of progress and areas of difficulty.

B. Student Involvement

1. Always foster active learning.
2. Help students build self-monitoring systems for all learning activities.
3. Promote learner independence and self-monitoring through cue systems that can be phased out gradually.
4. Teach, don't test; i.e., provide answers in early stages of learning, avoiding prolonged struggles.
5. Do not tell student to "try harder", or, that if he "tries hard", he will eventually learn. Trying hard only sets up anxiety which blocks learning. New strategies, not more effort, are needed.

C. Program Content

1. Provide warm-up activities; establish learning sets.

2. Never use children's readers, workbooks.
3. Improvise when appropriate materials and methods are not available.
4. Teaching sight words by lists is not recommended.
5. Plan order of learning activities to maximize transfer and to minimize interference.
6. Work at multiple instructional levels.

D. Program Plan and Delivery

1. Plan activities of relatively short duration and change frequently.
2. Move through drill activities at a rapid pace.
3. Try to involve cognitive thinking skills in instruction as much as possible.
4. Experiment with techniques using a plan that can be communicated with student.
5. Encourage student to help evaluate success of techniques and materials on an individual basis.

Most of these principles are self-explanatory. They all are logical given the prime goal of 'learning to learn.' Self-monitoring cue systems are techniques that help a student become aware of the correctness of his own responses. Immediate feedback from the teacher is necessary in early stages of any skill. However, continued teacher reinforcement will prevent the learner from developing independent strategies.

Stop

Children's materials (e.g., readers, workbooks) are generally not appropriate for adults for several reasons. First, they are degrading to the adult in terms of content. Second, the language used in children's materials (vocabulary, sentence structure, pictures) does not match the oral language used by the adult. Thus, trying to read a child's primer may actually be 'harder' than a higher level that more closely approximates an adult's spoken language. Appropriate materials may include high interest, low vocabulary selections, LEAD materials and certainly any language experience story generated by the adult learner.

The rationale for working at multiple instructional levels is based on time and interest factors. Phonics decoding skills usually need to start 'at the beginning,' while context reading may proceed at a higher level. The adult may be quite successful reading at an even higher level with his own language experiences written by the teacher. Cognitive strategies may be developed at any level of thinking that the learner can handle. Within a particular remedial session, these levels of instruction should be varied.

Drill activities need to be accomplished at a rapid pace with a high level of accuracy to produce automatic response patterning. More difficult tasks involve cognitive manipulation. Teacher modeling and suggestion of the use of cognitive techniques is important until the learner gains confidence to develop his own personal learning strategies. Student evaluation of both teacher designed and student designed techniques is an integral component of active involvement and monitoring.

Materials

The philosophy of remediation for ALD held here is one in which the actual materials used are of far less importance than the development of efficient learning strategies. As previously stated, a step-by-step progression through any published program is not feasible for the adult learner. Naturally the content materials used in 'learning how to learn' should focus on critical decoding and encoding skills. The recently developed LEAD Program provides one of the most comprehensive and thorough linguistic-based set of materials available. Many portions of this program have proven excellent for use with ALD. This program and a few other materials that have been found to be most adaptable to adult needs are discussed here. A list of published materials used in this project are found in Appendix E.

The Auditory Discrimination in Depth (A.D.D.) Program contains various manipulative materials that are beneficial in helping the student gain an understanding of sound tracking and sequencing. A vowel circle which contains 20 basic vowel sounds and their primary spelling patterns has been found to be invaluable to ALD. The use of these sound-symbols helps the student realize that more than the 5 traditionally-presented vowels are critical to reading.

A more complete use of A.D.D. material is developed for students with aphasia, severe discrimination problems and/or speech articulation problems. However, many of the exercises in the total program were not used. For example, nonsense syllables are not recommended for adults as they have proven very confusing. Decoding meaningful words is the appropriate focus, it is felt.

Word lists, sentences and short reading passages based on the vowel patterns are used in remediation. The letter tiles contained in the A.D.D. program are especially useful in helping students discover and learn sound sequencing skills and phoneme-grapheme (sound-letter) associations necessary to reading and spelling.

The phonics word lists from the Monterey Reading Program were used as the core phonics drill material. These word lists are arranged in 5 levels of difficulty and contain nearly every phonetically-regular, one- syllable ("short" vowel) word in the English language. Students learn to decode these words with the vowel cluster first (e.f. "ap," "esh") and then blend the beginning consonants (e.g. "b," "str") with the vowel cluster to form the word.

Although som individual variations are developed, this technique has generally been found most effective for several reasons. The strategy of blending 2 units (e.g. "str etch," "qu ench") as opposed to decoding each letter sound 1)places less reliance on short-term memory; 2)treats vowels as cluster units which greatly helps students who can not perceive isolated vowel sounds; and 3)speeds up the decoding process so that automaticity can be achieved.

Much of this phonics drill was carried out by students independently at home through the use of cassette tapes. The tapes were made during the remedial sessions. Both teacher and student recorded the tapes together. Feedback from one's own voice on tape helps build self-monitoring skills. The Monterey lists were used for both decoding and encoding (spelling).

The word lists from the Glass Analysis provide an excellent source material from which many good decoding and encoding activities can be designed. The lists are arranged by vowel clusters according to levels so that the teacher has a number of choices for each student. For example, the "ad" list commences with words such as "sad", " mad" and increases in difficulty to "madder", "admire" and then "graduate", "admiration". Each word builds on the basic cluster "ad". The Glass lists provide good opportunities to apply word structure skills; i.e., syllabication, prefix-suffix additions, etc..

A program entitled "Strategies: Solving Language and Reading Problems" which is being written by the report author was used with many of the students involved in this project. The goal of the "Strategies" program is to provide a basic understanding of the structure of the English language which can directly be applied to increase skills in word decoding, oral pronunciation, vocabulary and spelling.

"Strategies" is written at a cognitive learning level. As such, it contains practice items but no drill activities. It assumes rudimentary knowledge of phonics and suggests simultaneous work with sound-symbol generalizations. The student gains an overview of the origins of the English language and practice with prefixes and suffixes. A discovery-application is used for common spelling patterns and rules for syllabication. A section condensing many rules for accent into 7 basic generalizations is very effective for higher level students.

These materials are written on a continuum of levels so that they are suitable for individuals with LD of average or above average intelligence who are reading at levels 3-12. The program is designed to be used in a one-to-one or small group setting. Ongoing discussion and demonstration of concepts and interaction between student and teacher is critical to program effectiveness.

If only one published program could be chosen to help ALD learn to read and write, the LEAD materials would be the choice of the report author. Although the program has been designed for children, most of its components are adaptable and most appropriate for adults. LEAD is the most comprehensive and solidly based linguistic program available.

The Logical Encoding and Decoding Program (LEAD) is a sequential approach to the teaching of reading, writing and spelling within a developmental language framework. The program covers the most frequent to the least frequent sound patterns, spelling rules, grammar, syntax and creative writing using multi-sensory techniques. A unique feature of this program enables the student to work at several levels simultaneously; for example, reading at one developmental level and spelling at another. Because the program is concerned with mastery it can be used with students of all ages in an individualized format.

The philosophy is stated by the authors: "Learning to read and spell becomes a thinking skill instead of the note memorizing of words in material far below the intellectual challenge of the learner. "(p.266, manual). The manual, "Games 'n' Grids," provides the teacher will a wealth of background on language as well as practical techniques for instruction. A special section of the manual is devoted to "the older student." Thus, the adult educator is assisted in the effective application of the materials.

Many processing skills can be developed using materials from LEAD. For example, the word building grids not only give the student multisensory practice with reading and spelling but also reinforce visual spatial coordination. The worksheets are clearly written with ample space between items and no unnecessary visual distractors. Pictures and vocabulary are meaningful and are related to well by adults.

The LEAD program is arranged hirarchically on 10 levels of difficulty, each within four basic parts or stages. Part I contains phonological material based on a progressing sequence of sound-symbol associations found in the most common types of single-syllable words. Word study is always followed immediately by sentences for good transfer learning. Part II deals with morphological information-- spelling generalizations for endings, possessives, etc. The third part of LEAD builds on knowledge of word patterns, extending practice to multisyllabic words. Part IV focuses on spelling of these longer words. Syntactical and grammatical relationships are also developed through composition, Many combinations of parts and levels can be used to tailor the program to the needs of adult learners. Individual record charts included with the program help the teacher and the student organize remedial work.

Another positive factor of LEAD is its reasonable cost. Unlike most published programs, Educational Resources is a nonprofit organization devoted to helping students with language/learning problems. Also, portions of the program may be purchased separately. In sum, LEAD (Logical Encoding and Decoding) provides valuable tools for remediation at a cost-effcient price.

CHAPTER X

PROGRESS IN EDUCATIONAL THERAPY

This chapter examines the progress of the students who received educational therapy from three evaluative perspectives-academic gains, changes in processing and personal development. The summary presented here was compiled from the data on the students' "Progress and Growth Charts." These charts and final reports on each student are in Appendix D. Figure 8 is a sample of the chart.

Nineteen students were referred for educational therapy programs. Eighteen individuals received 10 or more hours of individual remediation, totalling 513 total hours. The greatest number of hours for an individual was 62. The average hours per student was 28.5. A breakdown of these figures was given in Table 6, page 20.

Progress and Growth Charts and final reports are available on 15 students. Mini-reports were written for the 4 students who did not complete programs.

Figure 8

PROGRESS AND GROWTH CHART

Student (sex) age

____

LD Severity: Hours of Therapy

____

ACADEMIC

	Date	Date
Letter-word Identification	____	____
Word attack	____	____
Reading comprehension	____	____
Spelling	____	____

PERSONAL DEVELOPMENT

	NC	Min.	Mod.	Maj.
Confidence in ability to learn				
Understanding of problems				
Acceptance of problem				
Strategies for learning				
Self-confidence				
Helpful in employment				
Helpful in life skills				
Helpful in relating to people				

PROCESS RATING

Levels	Ability Profile		N.C.	Slight	Mod.	Signif.
I.	__	Attention				
II.	__	Vis. discrim. and sequencing				
	__	Aud. discrim. and sequencing				
III.	__	Short-term memory				
	__	Long-term memory				
IV.	__	Vis. closure				
	__	Aud. closure				
	__	Lang. closure				
	__	Conceptualization				
V.	__	Self-monitoring				
	__	Intermodality integration				

Academic Progress

Test/re-test data was collected for 9 of the 15 students completing programs. Re-testing was not done on the 3 students who received less than 20 hours of remediation. Two students were evaluated by tools other than the WJPEB; retesting was not appropriate in either case. One student moved away from the Denver area.

Retesting was conducted "blindly;" i.e., items from the test typed on notecards and presented to the student casually as part of a remedial session. The procedure was used for greater retest validity and for less anxiety for students. Precautions were taken during remedial work to avoid exposure to test items. This was done to maximize validity of test/retest scores in situations where only a few months had lapsed since the original testing.

Data is displayed in Table 20. Grade and months scores are listed for the various reading skills. The number of months of educational therapy can be roughly calculated on the basis of 3 hours per work. Thus, students receiving 60 hours had about 5 months help; 40 hours, 3 months; 30 hours, 2½ months. One can see that the number of hours of educational therapy was not the critical factor in progress. Severity of the learning disability largely determines the amount of progres

Table 20

Academic Progress in Reading for 9 ALD

Student	Hours of Therapy	Word Iden.	Word Attack	Comp.	Spell.
1	62	1.8/2.3	2.5/4.0	2.5/3.0	2.0/3.0
2	62	1.2/1.8	1.0/2.4	0/1.6	1.1/-
3	43	1.5/2.3	1.8/2.8	2.3/2.5	1.3/1.8
4	41	1.7/2.0	1.9/3.2	1.8/3.1	2.9/3.4
5	34	1.8/2.0	1.6/2.4	1.7/2.5	---
6	28	5.0/5.7	2.5/3.5	7.0/8.0	3.2/3.4
7	28	1.8/2.2	1.6/2.4	2.0/2.6	2.8/-
8	25	9.0/10.0	7.0/12.0	7.0/11.0	4.5/6.0
9	21	1.8/2.3	1.6/3.2	1.8/2.7	1.7/2.4

Word Iden. = Letter-Word Identification: Tests skills of decoding and sight word identification; pronunciation of isolated words.

Word Attack: Tests skills of decoding non-meaningful syllables by applying knowledge of phonics and word structure.

Comp. = Passage Comprehension: Tests skills in supplying an appropriate missing word in sentences and short paragraphs using language closure.

Spell. = Spelling: Tests skills in recall and writing of words; also, tests skills in correcting words printed incorrectly.

Seven of these nine students had severe educational deficits; they were functionally illiterate.

Of the three reading scores, gains were least in word identification. This result is predictable due to the nature of this subtest which contains equally as many sight words as it does phonetically regular (decodable) words. Persons with severe LD often are never able to master sight words in isolation, although they usually learn to read them in the context of a sentence or passage as they approach a low functional reading level.

Gains in word attack skills (phonetic decoding and word structure) were very strong. Most students progressed one grade level or more in the few months they received help. These word attack skills provide the foundation for ALD' reading. These decoding skills plus language development are the key in learning to read.

Progress in comprehension skills was varied with small gains in some cases and sizeable gains in other cases. Increases in scores on this subtest depended on the individual's general language abilities to a great extent.

Gains in spelling were slight. Since written language is the most difficult language level, one would expect less progress here. Spelling skills simply take more time to develop than was available through this project.

In sum, the academic progress reported here is felt to be excellent. Most of these ALD had spent many years of their lives learning only the alphabet and a few sight words. Given appropriate remedial help, they were able to make significant gains in just a few months. It is predicted that with continued educational therapy, all would be able to become at least low functional readers.

Change in Learning Processes

The process evaluation criteria for the second direct service component objective of this project had to be changed. The original objective stated that selected subtests of the WJPEB would be used on a test/retest basis to measure gains in learning processes. As the project developed and changing ideas about the nature of LD influenced the staff, it became clear that the standardized test could not measure definitive processes of learning. As discussed in Chapters VI and VII, there has been little success in testing isolated processes in children. Even less valid measures of processing are found with adults. While the Woodcock-Johnson Psycho-Educational Battery does examine a number of relevant learning processes, all of the subtests require process abilities at several levels. Furthermore, scores can only be considered indicators. The final analysis of processing deficits depends on the abilities of the examiner. Thus, a process rating procedure was devised.

A special format based on the levels of learning presented in Figure 6, (p. 190-191) was developed in an attempt to quantify gains in processing. The chart entitled "Process Rating" can be viewed on the overall Progress and Growth Chart (Figure 8, p.205). The ratings for each student were based on teacher judgment. Final ratings were completed in a staffing situation with all teachers participating. Since often two teachers had worked with the same student, validity of the rating measure was strengthened.

The ability profile listed next to each process was completed based on original test results and observations in working with the student. Either "S", strength; "A", average; or "W", weakness was assigned to each of the processes listed. Each of the 11 processes is linked with an academic component skill for clarity and practical utility. In no cases were there any attempts to remediate a process using activities that were not academic or life/job coping in nature.

It is highly doubtful that remedial work is ever done with single processes. Several processes are used simultaneously in any given educational task. As discussed frequently in this report, the key to improving learning processes is the learner's development of effective cognitive strategies.

Hence these 11 processes do not represent single entities or concepts; rather, they explain how effectively the learner negotiates tasks involving these processes. All of the processes are modifiable through cognition and language mediation. With this understanding, the processes are defined here as they were used in the ratings.

Attention:	The ability to select and maintain awareness on the relevant aspects of a task.
Visual discrimination & sequencing:	The ability to distinguish differences in letters and perceive their sequence in words.
Auditory discrimination sequencing:	The ability to distinguish differences in sounds and perceive their sequence in words.
Short-term memory:	The ability to hold and manipulate information long enough to accomplish an immediate task, (e.g., hold decoded sounds in memory long enough to blend them into a word).
Long-term memory:	Retention of learned material over a period of time and ability to retrieve information from memory storage.
Visual closure:	The ability to perceive and selectively attend to appropriate visual cues to decode a whole word correctly.

Auditory closure:	The ability to perceive and selectively attend to sounds in sequence, blending them into words.
Language closure:	The ability to use linguistic knowledge to gain correct meaning from reading a sentence when all words are not decoded with certainty; language predictability; effective use of context cues.
Conceptualization:	The ability to identify, understand and apply concepts in any type of learning.
Self-monitoring:	The developed awareness of one's own responses in a learning task; ability to distinguish correctness/incorrectness of responses.
Inter-modality integration:	The ability to coordinate information from two or more sensory modalities, either in receiving or expressing information. (e.g., association of sounds and letter symbols in reading and writing).

There is no rational way to devise a table to numerically display progress in this area, or to compare students' gains. Process ratings on each of the 15 students are found in Appendix D. Ratings are reported in 4 categories: N.C.= no change; Slight-minimal change; Mod.-moderate degree of improvement; Signif.=major positive gains. A few generalizations can be based on the process change data:

1. All students regardless of their age or severity of problem were able to improve their processing of information.
2. The majority of students made most process gains that were judged "moderate." The second largest category of ratings was "slight."

3. With one exception, all students were considered to have made significant gains in one or more processes.

4. About half of the students received one, two or three ratings. These were always in either attention or long-term memory or conceptualization.

5. The most frequently rated "significant" gains were in self-monitoring and intermodality integration.

The three areas of least change listed in point 4 - attention, memory storage and retrieval, and conceptualization - appear to be the most resistant to change in the adult student. The statement does seem logical in view of knowledge of general learning theory and habit formation and change. The finding that intermodality integration and self-monitoring changes were often assessed as significant gains was very positive. These two process areas in particular are considered to be the foundation for successful learning and reflect the development of more efficient cognitive learning strategies.

Personal Development

Personal growth and development for 13 students is reported in Table 21. The ratings were made by the students themselves in evaluative discussions with their educational therapists. Students were asked to give an honest appraisal of the project in terms of its impact on their lives. Individual situations are discussed in greater detail in the final reports (Appendix D).

Table 21

	PERSONAL DEVELOPMENT			
	No Change	Minimal	Moderate	Major
Confidence in ability to learn		1	4	8
Understanding of problems			2	11
Acceptance of problem		1	3	9
Strategies for learning		1	4	8
Self-confidence		1	6	6
Helpful in employment	Not applic. 3	5	2	3
Helpful in life skills	3	2	4	4
Helpful in relating to people	3	4	4	2

The greatest changes are seen in understanding and acceptance of the problem. Major positive changes in attitudes and confidence and skills in general learning abilities are also reflected in Table 21 ratings. Remarks by students throughout the course of the project indicated that the educational therapists were highly successful in helping students become aware of and understand the nature of their individual problems. Not only does greater understanding make learning possible (through self-monitoring), but it also facilitates better psychological adjustment.

Lesser gains were reported with life and job and interpersonal skills. The impact of educational therapy in these areas takes longer than a few months to produce significant change. Those students who reported the most change in these broader life areas were those whose programs were more focused on specific individual problems with jobs or life skills.

Another area of improvement that students reported was in oral communication. Unfortunately, no ratings were included in the chart for this type of gain. Several students mentioned better skills in pronouncing words, speaking more coherently and listening to others with greater understanding.

In conclusion, tangible noteworthy gains were made by all students receiving over 20 hours of educational therapy. Academic skills levels were reported for 9 students based on test/retest scores. Learning process improvements as judged by teachers were noted for 15 students. Changes in personal attitudes were compiled into a progress chart format based on students' evaluation of their own progress. This project was felt to be very successful from each of these three evaluative perspectives on students' progress.

CHAPTER XI

BUDGET

The amount awarded to the CSPS Foundation to carry out this special project was $10,000. The amount originally agreed upon to be donated by the learning disabilities clinic was $1,905. Thus, the total project was submitted at $11,905. However, the amount donated far exceeded the original budget plan.

Two budget changes were made during the course of the project. The first involved collapsing three categories of direct services provided by the D/ET/C (Diagnostician/Educational Therapist/Consultant) into one general category. Thus, instruction, counseli services and staff training were treated as one direct service budget category that included these and other related functions.

The second change involved a transfer of $500 from instructional salaries to supplies and materials. This transfer was necessitated by the several locations in which students were tested and remedial programs were carried out. More materials than originally anticipated were needed.

Table 22

Budget and Revisions According to State Department Format

Functions	Salaries	Supplies and Materials	Local In-Kind	TOTAL
Instruction Counseling Services Staff Training	7,356.00 ↓ 6,856.00	300.00 ↓ 800.00	905.00 ↓ 3,170.00	10,826.00
Project Director	2,344.00		1,000.00 ↓ 5,487.00	7,831.00
TOTAL	$9,200.00	$ 800.00	$8,657.00	18,657.00

Table 23

BUDGET
ADULT EDUCATION SPECIAL REPORT
CSPS FOUNDATION

Budget Category	Amount Disbursed	Amount Allocated	Amount Donated	Total Allocate and Donated
Salaries				
Project Director	1,703.13		4,725.00	
Secretary/Receptionist	622.00		762.00	
	2,325.13	2,344.00	5,487.00	7,831.00
Instructors	6,856.00	6,856.00		6,856.00
Materials and Supplies				
Instructional Materials	483.60		400.00	
Miscellaneous & Supplies	335.27		100.00	
	818.87	800.00	500.00	1,300.00
Equipment & Overhead				
Equipment			400.00	400.00
Office and Remediation Space			2,000.00	2,000.00
Telephone Service			270.00	270.00
TOTAL	10,000.00	10,000.00	8,657.00	18,657.00

These changes and increases in amounts donated are shown in Table 22. The original amounts are listed under the various categories. Arrows indicate changes, with figures listed below the arrows reflecting the revisions. Actual disbursements are shown in Table 23, from which the budget narrative is written.

Budget Narrative

I. Salaries

A. Project Director

The Project Director's time was written into the budget so that half would be paid by the grant and half would be donated by the learning disabilities clinic. This total projected wage was set at $2,000. Actual disbursement to Project Director from the grant was $1,703. The donated amount during the time period of funding (7/1/79 - 6/30/80) was $1,725. An additional amount donated beyond the funding period primarily for data research and compilation, and report writing was roughly estimated at $3,000. (This was a low estimate at a low wage). Thus, total Project Director time donated was at least $4,725.

B. Secretarial/clerical

Services of secretarial nature (typing, reception, bookkeeping, etc.) were paid out of the Project

Director category. Disbursements totaled $622. In-kind donations from the clinic were $762. This amount included phone work and scheduling of students' sessions as well as final report preparation and typing.

Total wages paid out of the Project Director category (Project Director and secretary/clerical) were $2,325. Amount donated was $5,487. Combined allocation and donation totaled $7,831.

C. Instructors

The budget category of instructor refers to those professionals who provided direct student services under the title of Diagnostician/Educational Therapist/Consultant (D/ET/C). $6,856 was allotted and disbursed for wages here. A total of 640 hours of service were provided by the D/ET/C's. Hourly wages ranged from $8-12, depending on experience, professional degree and time with project. All services were documented on time sheets to the half-hour by the 5 persons who worked for the project.

II. Materials and Supplies

A. Instructional Materials

Instructional materials were items used directly with students; they usually were expendable published materials such as practice sheets and grids from the LEAD program, cassette tapes, reading folders. A test battery was also purchased from this allottment of $483.

Instructional materials donated for use by the project are valued at approximately $1,200 and are the property of Academic Development Services. These materials included several expensive published materials and kits (A.D.D., LEAD programs), a controlled reading machine, books, tape recorders, a mimeograph machine for student materials, etc. The donation is listed at $400 for the use of these materials during the course of the project.

B. Miscellaneous and Supplies

This category of which $335 of the grant monies were disbursed and $100 of materials were donated covered a variety of expendable materials. Included were paper, pencils, chalk, copying fees, notebooks, stationary, postage, student graphs, report printing and binding.

III. Equipment and Overhead

A. Equipment

Equipment donation was listed at $400. This reflects use of equipment owned by the entire clinic for use by project students and staff. Included in this category are chairs, tables, typewriter, copy machine, blackboards, space dividers, etc.

B. Office and Remediation Space

These donated costs were computed on the basis of estimated percentage of use of the LD clinic by the project. Thus, during 10/70 - 12/79 the project occupied 1/3 of learning disabilities clinic's space; and 1/2 space was utilized by the project from 1/80 through 6/80 ($1,500). Total space/rent donations were $2,000.

C. Telephone Service

Telephone service was also based on the same 1/3 and 1/2 percentages of project to clinic services as was the preceding space/rent category. The donation for telephone was $270.

In summary, this project was granted $10,000, of which all monies were disbursed. The total amount donated was $8,657. The total project expenditures were $18,657.

CHAPTER XII

CONCLUSIONS AND RECOMMENDATIONS

Twenty-five students with learning problems were referred to this project from six local ABE programs in the Denver Metro Area. Referrals were made by ABE teachers and counselors. The use of an LD Indicators Checklist assisted ABE staff in identifying students for referral.

Diagnostic evaluation was carried out for 24 students ranging in age from 16 to 52 by learning disabilities specialists. A thorough evaluation consisted of a personal intake interview, a minimum of two testing sessions, a formal written report (given to the student and his/her family and to appropriate ABE staff) and an interpretive conference.

The Woodcock-Johnson Psycho-Educational Battery was the major diagnostic tool used with 21 of the students. This relatively recent test battery which has normative scores for adults proved to be a good evaluation instrument. Although the WJPEB is far from an ideal individual adult test, it quite clearly distinguished between specific learning disability and general learning problems. Careful use of this testing procedure revealed patterns of processing that were helpful in designing remedial programs. The detailed scoring and reporting of test results in graphic form were very useful in explaining results to students and their ABE teachers. A strong feature of the WJPEB is the provision of discrepancy scores (differences between abilities and achievement skills) obtained through scoring. These discrepancy scores greatly assisted the diagnostician's interpretation of the severity of the problems and the prognosis for treatment through educational therapy.

Test data compiled on 15 LD students indicated adequate cognitive abilities in verbal and reasoning areas and generally weak processing in perceptual and short-term memory areas. One particular subtest was found to be highly predictive of underlying linguistic skills necessary in the reading process. Far greater discrepancies between aptitudes and actual skills were discovered in the area of reading than in mathematics or written language for these 15 individuals.

Interpretive conferences, or staffings, were conducted by the LD diagnostician to explain test results to the student and his/her family and to ABE teachers working with the student. Treatment approaches and general remedial goals were also discussed during these conferences. Student and teacher responses as tabulated from evaluation checklists were highly positive. Understanding of the learning problems was greatly increased. All of the students were appreciative of the work done on their behalf.

Of the 24 adult problem learners receiving diagnosis, 11 had severe disabilities and were functionally illiterate. Six persons had very low level reading skills and could be considered moderately handicapped. Seven other persons had milder learning problems. Specific learning disability of a neurophysiological nature was found to be the primary learning handicap for 16 individuals, although several other problems usually accompanied this condition. The other individuals also had significant learning problems, but could not be regarded primary LD.

Eighteen individuals received individualized educational therapy programs of 10 - 62 hours over a period of 2 - 8 months. These programs were generally carried out at the CSPS Foundation clinic center; some were conducted at local ABE centers.

The remedial approach for this project was based on a successful clinical model of educational therapy. Emphasis was placed on the development of cognitive and language strategies to improve the efficiency of learning processes so that academic skills in reading and writing could be gained. Personal counseling was a major part of the educational therapy process.

Counseling typically focused on adjustment to the learning disability in educational and many other life situations.

A variety of remedial materials were adapted to individual needs. Although several of these programs contain excellent information, they were secondary in importance to the interaction of student and educational therapist in the facilitation of more effective learning processes. "Learning how to learn" was the dominant goal for each student. Until the learner develops more efficient strategies of processing information, the best remedial content program taught by the most patient tutor will be of little help to the LD adult.

Self-monitoring, defined as learner awareness of responses and ability to identify correctness through internal feedback, was found to be a key variable in the success of remediation. This ability can be developed as a skill by the LD adult through cognitive and verbal strategies (active thinking processes). Better integration of primary sensory modality input (coordination of visual, auditory and kinesthetic information), association and expression is also very important in remediation. Improvements in intermodality integration are accomplished also by cognitive/verbal strategies, and then may be brought to automatic levels through practice.

Evaluation of this project from the data collected and the students' personal evaluations indicates that the project was highly successful. Academic gains in reading skills appear highly significant for the short period of educational therapy. Improvements in critical learning processes were also strong in most cases. Positive changes in personal development were great in areas of understanding and acceptance of the learning disability, and in confidence in the ability to learn.

Post-project recommendations and plans of the 14 students who "completed" remedial programs through the project warrant discussion. Three students felt they had accomplished their immediate educational goals and are pursuing vocational goals successfully. Three other students plan to return to their local ABE programs where they should be able to make satisfactory progress. Five other students who plan to continue their education through ABE will need additional individual help to be successful. Three of these students are presently having difficulty securing this help within ABE. Three of the students with severe problems have chosen not to return to ABE programs. These students stated that they could not obtain enough concentrated individual help within ABE to make their efforts worthwhile.

Evaluation of Situation and Recommendations

The following statements of fact, prediction and opinion are based on these sources of information: knowledge and broad experience with all ages of LD students and their families, with clinical expertise in working with adults with LD; communication with ABE students, teachers and administrators in both formal and informal capacities; familiarity with the field of LD, past and current; review of literature of ABE projects for problem learners; communication with persons in various community agencies dealing with learning disabilities, e.g., public schools, Vocational Rehabilitation, job training programs.

It appears that ABE is presently quite well equipped to deal with learners with mild problems, although greater individualization of programs would be recommended. However, approximately one-third of the ABE population, those with moderate and severe learning handicaps, are not receiving appropriate educational services despite patient, concerned teacher efforts. Moderately impaired learners do make some gains in ABE programs, but not nearly as effectively or rapidly as possible. Severely impaired learners often make no measureable gains in ABE. Dozens of students referred through this project and through Vocational Rehabilitation to the LD clinic have spend several years in ABE programs. Frequently their only achievement has been learning the alphabet and memorizing a handful of sight words. They possess no functional decoding (reading) skills or effective learning strategies.

No blame can be placed for this educational tragedy. Knowledge of learning disabilities is still in early stages of development; awareness of adult learning disabilities is only beginning to surface in society. Positive actions can be planned for and taken in the future.

Two major obstacles within ABE will have to be overcome in the development of appropriate treatment plans for LD adults. The first obstacle is lack of expertise. The assumption that any teacher can become knowledgeable and skilled with ALD through a few in-service training sessions or a class is grossly incorrect. LD problems are very complex in the adult learner. A severely dyslexic and aphasic student presents a challenge to the expert and a total frustration to the classroom teacher. Despite the dedication and concern observed in many ABE teachers, they simply cannot become experts without intensive training.

The second obstacle appears to lie with the physical impossibility of providing intensive, individualized help to specific students. In other words, teacher-student ratios are too high in many ABE situations to appropriately deal with LD students. Even with moderate teacher-student ratios, the environment necessary to approximate effective educational therapy (totally private and personal) cannot be established unless a minimum of 30 minutes of uninterrupted one-to-one time is provided.

What seems to be occuring in a number of ABE situations at this point is frustrating to all concerned. As teachers are gaining awareness of learning problems they are able to identify more and more students with problems. On the other hand, they are not able to provide the one-to-one instruction, due to lack or time or expertise or both. The proper situation, one-to-one interaction, and teacher abilities/skills are both vital for effective LD remediation. One ingredient without the other precludes success.

What predictions can be made for the future of LD students in ABE? A chapter of this report dealt with the state of confusion of LD services in secondary level public schools. Acknowledgements of failures or only partial successes in early treatment of LD, particularly in severe cases, were cited in review of LD literature. The lifelong nature of LD/language disorders was documented throughout the report. It is felt that more young adults who have been identified as LD in public schools will be enrolling in ABE programs to continue their education. (LD adults as a group are much more motivated educationally than are LD adolescents). Furthermore, it is predicted that these individuals will have greater expectations and needs for educational success than today's ABE students. Greater public knowledge of the LD condition and increased social and employment expectations for literacy will be contributing factors. Thus, greater demands will be placed on Adult Education. These demands will come not only from students themselves, but also from parents, job training programs, employers and rehabilitation programs. Given present estimates of one-half to three-fourths of the current ABE population as problem learners, ABE faces a sizeable challenge.

What can be done to better serve the LD student in ABE? Special projects such as this, however successful for certain individuals, represent only a small step in helping the millions of ALD in this country. Far more than isolated special projects and occasional in-service training for ABE teachers will be needed if effective, long-range changes are to be made.

A large-scale permanent committment to set up special services for LD students within ABE will have to be made before tangible gains are realized. Expertise in adult learning problems could be obtained either through LD specialists who want to develop skills in working with adults, or through ABE teachers who want to be trained as LD specialists. The use of volunteers is often suggested to meet the needs of exceptional learners. This alternative is an incomplete solution. Rarely would a volunteer have the background to be trained as an LD therapist. Volunteers would be helpful in carrying out drill and practice work, but only under careful direction of an LD teacher.

The ideal situation would be to have a full-time LD program in each local ABE center. The program would be staffed by a LD specialist, several ABE teachers in training with this person and several aides. Good, long-term results could be projected through such a plan. Obviously the ideal is not feasible without careful preparation. Initiation of special LD programs in ABE centers could start with the establishment of special services at certain centers that would serve ABE programs from designated geographic areas. Diagnostic evaluation, remedial programs and teacher consultant services should be offered for a successful program. Because of the expense involved in organizing an LD program (physical setting, staff, materials), such a center would have to be guaranteed funding well beyond a one-year grant period. There would be no difficulty in securing staff. Many secondary LD specialists express concern about their students as adults. Among ABE teachers there are many who have the flexibility, creativity and self-confidence to become good educational therapists.

These ideas may seem grandiose to adult educators. However, ABE is the most rational choice of educational programs to provide remedial help for problem learners. In this author's opinion, community colleges, job programs, public high schools are not the most appropriate organizations to deal with severely or moderately handicapped LD adults. Certainly private and university clinics cannot begin to meet the needs of so many individuals.

ABE will need to reach beyond its present scope to procure funds to accomplish such goals. Cooperative alliances with vocational programs (public and private), community organizations dealing with LD, public school special services, and business and industry are suggested as possible directions to pursue.

BIBLIOGRAPHY

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BIBLIOGRAPHY

Adler, Sol. "Megavitamin Treatment." *Journal of Learning Disabilities*, Vol. 12, 1979, pp. 678-681.

Aman, Michael G. "Drugs and Learning Problems." *Journal of Learning Disabilities*, Vol. 13, 1980, pp. 87-97.

Anastasi, A. *Psychological Testing*. 3rd ed. New York: Macmillan, 1968.

Association for Children with Learning Disabilities. Unpublished Conference Proceedings. Milwaukee, 1980.

Ayres, J. A. *Southern California Perceptual Motor Tests*. Los Angeles: Western Psychological Services, 1969.

Bannatyne, A. *Language, Reading and Learning Disabilities*. Springfield, Illinois: Charles C. Thomas, 1971.

Barsch, Ray H. In *Teaching Children With Learning Disabilities*. Ed. E. C. Frierson and W. B. Barbe. New York: Appleton-Century-Crofts, 1967, pp. 58-93.

__________. *Achieving Perceptual-motor Efficiency*. Vol. 1, Seattle: Special Child Publications, 1967.

Bateman, B. "Reading: A Controversial View - Research and Rationale." In *Learning Disabilities*. Ed. L. Tarnopol. Springfield, Ill.: Charles C. Thomas, 1969.

Berry, Mildred Freburg. *Teaching Linguistically Handicapped Children*. Englewood Cliffs, New Jersey: Prentice-Hall, 1980.

Bloom, Lois, and Margaret Lahey. *Language Development and Language Disorders*. New York: John Wiley & Sons, 1980.

Boder, E. "Developmental Dyslexia: A Diagnostic Screening Procedure Based on Three Characteristic Patterns of Reading and Spelling." In Learning Disorders, Vol. 4, Ed. B. Bateman. Seattle: Special Child Publications, 1971, pp. 298-342.

__________. "Developmental Dyslexia: Prevailing Diagnostic Concepts and New Diagnostic Approach." In Progress in L. D., Vol. 2, Ed. H. R. Myklebust. New York: Grune & Stratton, 1971, pp. 293-321.

Bruner, Jerome S. "On Cognitive Growth." In Children with Learning Problems. Ed. Selma Sapir and Ann Nitzburg. New York: Brunner/Mazel, 1973, pp. 408-414.

Bryan, Tanis and Susanna Pflaum. "Social Interactions of Learning Disabled Children: A Linguistic, Social and Cognitive Analysis." Learning Disability Quarterly. Vol. 1, 1978, pp. 70-79.

Bush, Wilma Jo and Marian Taylor Giles. Aids to Psycholinquistic Teaching. Columbus, Ohio: Charles E. Merrill, 1969.

Camp, Bonnie W. and Jack L. Dolcourt. "Reading and Spelling in Good and Poor Readers." Journal of Learning Disabilities. Vol. 10, 1977, pp. 300-307.

Carter, John L. and Harold Russell. "Biofeedback and the Academic Attainment of LD Children." Academic Therapy. Vol. 15, 1989, pp. 483-486.

Chalfant, James C. and Margaret A. Scheffelin. Central Processing Dysfunctions in Children: A Review of Research. Phase Three of a Three-Phase Project. USDO HEW Na Ph-43-67-61. Univ. of Illinois, 1969. Monograph No. 9.

Chall, J. Learning to Read: The Great Debate. New York: McGraw-Hill, 1967.

Chaney, Clara M. and Kephart. Motoric Aids to Perceptual Learning. Columbus, Ohio: Charles E. Merrill, 1968.

Chappell, Gerald E. "Cognitive-Linguistic Therapy: Comprehension and Problem Solving." Journal of Learning Disabilities. Vol. 10, 1977, pp. 275-279.

Chomsky, Noam. "On the Biological Basis of Language Capacities." In *Psychology and Biology of Language and Thought: Essays in Honor of Eric' Lenneberg*. Ed. G. Miller and E. Lenneberg. New York: Academic Press. 1978, pp. 199-219.

Clements, Sam D. *Task Force I: Minimal Brain Dysfunction in Children*. Nat'l Institute of Neurological Diseases and Blindness, HEW, 1966.

__________, et al. "Minimal Brain Dysfunctions in the School-Age Child." In *Education Children with Learning Disabilities*. Ed. E. C. Frierson and W. B. Barbe. New York: Appleton-Century-Crofts, 1967, pp. 66-84.

__________. "Minimal Brain Dysfunction: An Historical Overview." *In Children with Learning Problems*. Ed. S. Sapir and A. Nitzburg. New York: Brunner/Mazel, 1973, pp. 173-186.

Coate, LaVon. et al. "*Final Report of a Reading Program for ABE Students: Level I*. Teacher Training Materials, Vincennes University, Vincennes, In. 1978.

__________. 309 LD Project, Vincennes, In. 1970.

Cohn, Robert. "The Neurological Study of Children with Learning Disabilities." In *Educating Children with Learning Disabilities*. Ed. E. C. Frierson and W. B. Barbe. New York: Appleton-Century-Crofts, 1967, pp. 162-170.

Cox, Sheralyn. "The Learning Disabled Adult." *Academic Therapy*. Vol. 13, 1977. p. 81.

Critchley, MacDonald. "A Critical Survey of Our Conceptions as to the Origins of Language." In *Aphasiology and other Aspects of Language*. London: 1970, pp. 92-110.

Cruickshank, W. M. et al. *Learning Disabilities: The Struggle from Adolescence Toward Adulthood*. Syracuse, New York: Syracuse University Press, 1980, p. 195.

Dance, Frank E. X and Carl E. Larson. *Speech Communication Concepts and Behavior*. New York: Holt, Rinehart and Winston, 1972.

__________. "Speech Communication as the Sign of Mankind," in "Symposium on Species Specificity of Language." *The Great Ideas Today*. Chicago: 1975, pp. 40-57.

deHirsch, K. "Plasticity and Language Disabilities." In Learning Disorders, Vo. 1. Ed. J. Hellmuth, Seattle: Special Child Publications, 1965. pp. 241-50.

__________, et al. Predicting Reading Failure. New York: Harper & Row, 1966.

Deshler, D. D., et al. "Programing Alternatives for LD Adolescents: A Nationwide Survey." Academic Therapy. Vol. 14, 1979, pp. 391-396.

__________. "Issues Related to the Education of Learning Disabled Adolescents." Learning Disability Quarterly. Vol. 1, 1978, pp. 2-10.

__________, et al. "Error Monitoring of Schoolwork by Learning Disabled Adolescents." Journal of Learning Disabilities. Vol. 11, 1978, pp. 401-414.

Doman, Robert J., et al. "Children with Severe Brain Injuries: Neurological Organization in Terms of Mobility." In Educating Children with Learning Disabilities. Ed. E. C. Frierson and W. B. Barbe. New York: Appleton-Century-Crofts, 1967, pp. 363-372.

Dunn, L. Peabody-Picture Vocabulary Test. Circle Pines Minnesota: American Guidance Services. 1959.

Early, George. "Learning Disabilities: An Information - Processing Model." School Psychology Digest. Vol. 5, 1976, pp.

Eisenberg, Leon. "Psychiatric Implications of Brain Damage in Children." In Educating Children with Learning Disabilities. Ed. E. C. Frierson and W. B. Barbe. New York: Appleton-Century-Crofts, 1967, pp. 171-187.

Feingold, Ben F. Why Your Child is Hyper-active. New York: Randon House, 1974.

Finch, A. J. Jr. and Anthony Spirito. "Use of Cognitive Training to Change Cognitive Processes." Exceptional Education Quarterl Vol. 1, 1980, pp. 31-40.

Frauenhein, J. G. "Academic Achievement Characteristics of Adult Males who were Diagnosed as Dyslexic in Childhood." *Journal of Learning Disabilities*. Vol. 11, 1978, pp.482-483.

__________. "Dyslexic Children as Adults." *Journal of Learning Disabilities*. Oct. 1978, pp. 476-495.

Frostig, M. et al. *Marianne Frostig Developmental Test of Visual Perception*. Palo Alto, Calif.: Consulting Psychologists Press, 1964.

__________, et al. *The Frostig Program for the Development of the Visual Perception*. Chicago: Follett, 1964.

__________. In *Teaching Children with Learning Disabilities*. Ed. J. M. Kauffman and Daniel P. Hallahan. Columbus, Ohio: Charles E. Merrill, 1976.

Gardner, William I. *Children with Learning and Behavior Problems*. Boston: Allyn & Bacon. 1978.

Gearheart, B. R. *Learning Disabilities, Educational Strategies*. St. Louis: C. V. Mosby, 1973.

Getman, G. N. "The Visuomotor Complex in the Acquisition of Learning Skills." In *Learning Disorders*, Vol. 1. Ed. J. Hellmuth. Seattle: Special Child Publications, 1965, pp. 49-76.

__________. In *Teaching Children with Learning Disabilities*. Ed. James M. Kauffman and Daniel P. Hallahan. Columbus, Ohio: Charles E. Merrill, 1976.

Ginsburg, Herbert and Sylvia Opper. *Piaget's Theory of Intellectual Development: An Introduction*. Englewood Cliffs, N.J.: Prentice-Hall, 1969.

Goodman, L. and Price. "BEH Final Regulations for Learning Disabilities: Implications for the Secondary School." *Learning Disabilities Quarterly*, Vol. 1, 1978, p. 78.

Grill, J. Jeffrey. "School Programing for Adolescents." *Academic Therapy*. Vol. 13, 1978, pp. 389-400.

Grochowski, Barbara. Director, *Adult Performance Level Program*. Jefferson County Adult High School. Wheat Ridge, CO. 1980.

__________. *Life Skills Specialist, APL Director*, Jefferson County Adult High School, Wheat Ridge, CO. 1980.

Grush, Helen and Ellie Shacter. The Grush Method. Alphapress. Lexington, Mass. 1978.

Hall, Mary Anne and Christopher J. Ramig. Linguistic Foundations for Reading. Columbus: Charles E. Merrill. 1978.

Hallahan, Daniel P., et al. "Selection Attention andFocus of Control in LD and Normal Children." Journal of Learning Disabilities, Vol. 11, 1978, pp. 231-237.

__________, et al. "Self-Monitoring of Attention as a Treatment for a Learning Disabled Boy's Off-Task Behavior." Learning Disability Quarterly, Vol. 11, 1978, pp. 231-236.

__________, et al. Psychoeducational Foundations of Learning Disabilities. Englewood Cliffs, N.J.: Prentice-Hall, 1973.

Hammill, D. "Training Visual Perceptual Processes." Journal of Learning Disabilities. Vol. 5, 1972, 552-59.

__________, et al. "The Effectiveness of Psycholinguistic Training." Exceptional Children. Vol. 41, 1974, pp. 5-15.

Harber, Jean R. "Issues in Assessment of Language and Reading Disorders in Learning Disabled Children." Learning Disability Quarterly. Vol. 3, 1980, pp. 11-19.

Hardy, William C. "On Language Disorders in Young Children." In Educating Children with Learning Disabilities. Ed. E. C. Frierson and W. B. Barbe. New York: Appleton-Century-Crofts, 1967, pp. 36-51.

Havertape, John R. and Corrine E. Kass. "Examination of Problem Solving in Learning Disabled Adolescents Through Verbalized Self-Instructions." Learning Disability Quarterly, Vol. 1, 1978, pp. 94-100.

Hockett, C. F. "The Origins of Speech." Scientific American, 203, No. 3, 1960, pp. 89-96.

Hoy, E., et al. "The Hyperactive Child at Adolescence: Cognitive Emotional and Social Functioning." Journal of Abnormal Child Pychology, Vol. 6, 1978, p. 323.

Ingham, Grace, et al. "Final Report: Educational Assessment and Instructional Strategies for Adult Exceptional Learners." ERIC Documents, Ed 167724, Resources in Education, Aug., 1979.

Johnson, Doris, et al. "Adolescents with Learning Disabilities: Perspectives from an Educational Clinic." Learning Disablilty Quarterly, Vol. 1, 1978, pp. 24-36.

Johnson, Doris, et al. Learning Disabilities: Educational Principles and Practices. New York: Grune & Stratton, 1967.

Jordan, Dale R. Dyslexia in the Classroom. Columbus: Charles Merrill, 1972.

__________. Learning Disabilities Characteristics of ABE Students. Jordan-Adams Learning Center, Oklahoma City.

Kahn, Michael S. "Learning Problems of the Secondary and Junior College Learning Disabled Student: Suggested Remedies." Journal of Learning Disabilities, Vol. 13, 1980, pp. 445.

Kampwirth, Thomas J and Marion Bates. "Modality Preference and Teaching Method: A Review of the Research." Academic Therapy, Vol. 15, 1980, pp. 597-606.

Kass, Corrine E. "Learning Disabilities." In Review of Educational Research, Vol. 39, 1969, pp. 71-82.

__________. "Identification of Learning Disability: Dyssymbolia." Journal of Learning Disabilities, Vol. 10, 1977, pp. 425-432.

Kaufman, David and Patricia Kaufman. "Strategy Training and Remedial Techniques." Journal of Learning Disabilities, Vol. 12, 1979, pp. 408-415.

Kay, Herbert. Presentation at Medical Symposium. ACLD International Conference. Milwaukee, Wisc., 1980.

__________, et al. "Neurometrics: No longer in its Infancy, but not Quite Mature." In Assoc. for Child with LD. (ACLD), Scientific Studies Committee, Conference Medical Backgrounder, ACLD Internat'l. Conf., Milwaukee, Wisc., 1980.

Keogh, Barbara K. and Anne T. Glover. "The Generality and Durability of Cognitive Training Effects." Exceptional Education Quarterly, Vol. 1, 1980, pp. 75-82.

Kirk, S. A. and J. Elkins, "Characteristics of Children in Resource Rooms." From Leadership Training Institute in Learning Disabilities, Tucson, Az., 1974.

__________. Educating Exceptional Children. Boston: Houghton Mifflin, 1962, p. 261.

__________ and W. D. Kirk. Psycholinguistic Learning Disabilities: Diagnosis and Remediation. Urbana, Ill.: University of Ill. Press, 1971.

__________, et al. Illinois Test of Psycholinguistic Abilities. Urbana, Ill.: University of Illinois Press, 1968.

Kirk, Winifred D. Aids and Precautions in Administering the Illinois Test of Psycholinguistic Abilities. Chicago: University of Illinois Press. 1974

Kephart, N. The Slow Learner in the Classroom. Columbus, Ohio: Charles E. Merrill. 1971.

Kleffner, Frank R. Language Disorders in Children. New York: Bobbs-Merrill, 1973.

Kronick, Doreen. "An Examination of Psychosocial Aspects of Learning Disabiled Adolescents." Learning Disability Quarterly, Vol. 1, 1978, pp. 86-93.

Kulick, Hollybeth. The Kulick Foundation for the Learning Disabled. Newsletter: Sun is in the Rainbow, Oct., 1980, p. 4.

__________. Directress and Founder, Kulick Foundation for the Adult Learning Disabled, Denver, Co. 1980.

Leigh, James E. "Whole-Language Approaches: Premises and Possibilities." Learning Disability Quarterly, Vol. 3, 1980, pp. 62-69.

Lenkousky, L and D. Saposnek. "Family Consequences of Parental Dyslexia." Journal of Learning Disabilities, Vol. 11, 1978, pp. 47-53.

Lenneberg, Eric H. Biological Foundations of Language. New York: John Wiley & Sons, 1967.

Lerner, J. Children with Learning Disabilities. Boston: Houghton Mifflin, 1976, p. 11.

Lezak, Muril D. Neuropsychological Assessment. New York: Oxford Univ. Press, 1967.

Lindamood, C. and P. Lindamood. Auditory Discrimination in Depth. Boston: Teaching Resources, 1969.

Lindsey, J. D. and M. A. Kerlin. "Learning Disabilities and Reading Disorder: A Brief Review of the Secondary Literature." Journal of Learning Disabilities, Vol. 12, 1979, pp. 408-414.

Llody, John. "Academic Instruction and Cognitive Behavior Modification: The Need for Attack Strategy Training." Exceptional Education Quarterly, Vol. 1, 1980, pp. 53-64.

Loper, Ann B. "Metacognitive Development: Implications for Cognitive Training." Exceptional Education Quarterly, Vol. 1, 1980, pp. 1-8.

Luria, A. R. Neurolinguistics 6: Neuropsychological Studies in Aphasia. Ed. Richard Hoops and Yvan Lebrun. Amsterdam: Swets and Zeitlinger B.V., 1977.

__________. Basic Problems of Neurolinguistics. Trans. Basil. The Hague: Mounton, 1976.

Maier, Arlee S. "The Effect of Focusing on the Cognitive Processes of Learning Disabled Children." Journal of Learning Disabilities, Vol. 13, 1980, pp. 143-147.

Margolis, Howard. "Auditory Perceptual Test Permance and the Reflection-impulsivity Dimension." Journal of Learning Disabilities, Vol. 10, 1977, pp. 164-172.

Myron, Lewis M. "Ecological Factors in LD. Journal of Learning Disabilities, Oct. 1978, pp. 495-505.

McCarthy, J. J. and J. F. McCarthy. Learning Disabilities. Boston: Allyn & Bacon, 1969.

McGrady, H. J. "Language Pathology and Learning Disabilities." In Progress in Learning Disabilities. Ed. H. R. Myklebust. Vol. 1 New York: Grune and Stratton, 1968, pp. 217-224.

McNutt, Gaye. "Perspectives on Reading, Language Arts, and Learning Disabilities." Learning Disability Quarterly, Vol, 3, 1980, pp. 3-10.

__________ and Ginger Heller. "Services for Learning Disabled Adolescents: A Survey." Learning Disabilty Quarterly, Vol. 1, 1978, pp. 101-104.

Miechenbaum, Donald. "Cognitive Behavior Modification with Exceptional Children: A Promise Yet Unfulfilled." Exceptional Education Quarterly, Vol. 1, 1980, pp. 83-88.

Miller, Maurice and Michael E. Rohr. "Verbal Mediation for Perceptual Deficits in Learning Disabilities: A Review and Suggestions." Journal of Learning Disabilities, Vol. 13, 1980, pp. 319-322.

Minskoff, Esther H. and J. Gerald Minskoff. "A Unified Program of Remedial and Compsensatory Teaching for Children with Process Learning Disabilities." Journal of Learning Disabilities, Vol. 9, 1976, pp. 215-222.

Mykelbust, Helmer. Development and Disorders of Written Language. Picture Story Language Test. Vol. 1. New York: Grune & Stratton. 1965.

__________, and D. J. Johnson. Learning Disabilities: Educational Principles and Practices. New York: Grune and Stratton, 1967.

__________. "Learning Disabilities: Definition and Overview." In Progress in Learning Disabilities. Vol. 1. Ed. H. Myklebust. New York: Grune & Stratton, 1968, pp. 1-15.

National Advisory Committee on Handicapped Children. Special Education for Handicapped Children, First Annual Report. U.S. Office of Education, 1968.

Orton, S. T. Reading, Writing, and Speech Problems in Children. New York: Norton, 1937.

Parskevopoulos, John and Samuel A. Kirk. *The Development and Psychometric Characteristics of the Revised Illinois Test of Psycholinguistic Abilities*. Chicago: University of Illinois Press, 1969.

Parer, Michael S. Project Director, ABE/LD TV. A 309 Adult Education Demonstration Project, Indiana Dept. of Public Instruction: Dir. of Adult and Community Ed., Channels, Inc. Indianapolis, IN., 1978.

Penfield, Wilder and Lamar Roberts. *Speech and Brain Mechanisms*. Princton, N.J.: Princeton University Press, 1959.

Perkins, William H. *Speech Pathology: An Applied Behavioral Science*, St. Louis: C. V. Mosby, 1971.

Pirizollo, Francis J. *The Neuropsychology of Developmental Reading Disorders*. New York: Praeger Publishers, 1979.

Piaget, Jean and Bårbel Inhelder. *The Psychology of the Child*. Trans. Helen Weaver. New York: Basic Books, 1969.

Rapp, Doris J. "Food Allergy Treatment for Hyperkinesis." *Journal of Learning Disabilities*, Vol. 12, 1979, pp. 608-616.

__________. "Does Diet Affect Hyperactivity?" *Journal of Learning Disabilities*, Vol. 11, 1978, pp.383-389.

Rappaport, Sheldon R. In *Teaching Children with Learning Disabilities*. Ed. James M. Kauffman and Daniel P. Hallahan. Columbus, Ohio: Charles E. Merrill, 1976.

Reid, D. Kim and Wayne P. Hresko. "A Developmental Study of the Relation Between Oral Language and Early Reading in Learning Disabled and Normally Achieving Children." *Learning Disability Quarterly*, Vol. 3, 1980, pp. 54-61.

Roach, C. and N. Kephart. *The Purdue Perceptual-motor Survey Test*. Columbus, Ohio: Charles E. Merrill, 1966.

Rosenthal, Joseph H. *The Neuropsycho pathology of Written Language*. Chicago: Nelson-Hall, 1977.

Roth, Steven F. and Charles A. Perfetti. "A Framework for Reading, Language Comprehension, and Language Disability." *Topics in Language Disorders*, Vol. 1, 1980, pp. 51-28.

Rutler, Michael. "Brain Damage Syndromes in Childhood: Concepts and Findings. Journal of Child Psychology and Psychiatry, Vol. 18, 1977.

Schworm, Ronald W. "Effect of Selective Attention on Decoding Skills." Journal of Learning Disabilities, Vol. 12, 1979, pp. 639-644.

Sieben, Robert L. "Controversial Medical Treatments of Learning Disabilities." Academic Therapy, Vol. 13, 1977, pp. 133-148.

Simpson, Bickley. "Hemispheric Specialization." In Games 'n' Grids Manual, Helen B. Grush. Lexington, Mass.: LEAD Ed. Resources, 1980, pp. 66-81.

Slingerland, Beth H. Slingerland Screening Tests for Identifying Children with Specific Language Disability. Cambridge, Mass.: Educators Publishing Service, 1974.

Smith, Aaron. "Lenneberg, Locke, Zangwill, and the Neurophsychology of Language and Language Disorders." In Psychology and Biology of Language and Thought: Essays in Honor of Eric Lenneberg. New York: Academic Press. 1978, pp. 133-150

Smith, Don A. and Wilburn. "Specific Predictors of Learning Difficulties." Academic Therapy, Vol. 12, 1976, pp. 412-417.

Sobotka, Karen R. et al. "Some Psychological Correlates of Developmental Dyslexia." Journal of Learning Disabilities, Vol. 10, 1977, pp. 363-369.

Sowell, Virginia et al. "The Effects of Psycholinguistic Training on Improving Psycholinguistic Skills." Learning Disability Quarterly, Vol. 2, 1979, pp. 69-77.

Stark, Joel and Geraldine P. Wallach. "The Path to a Concept of Language Learning Disabilities." Topics in Language Disorders, Vol. 1, 1980, pp. 1-14.

Stonebraker, D and M. Stremel. Growing up with a Learning Disability. From a series of videotapes on ALD. P. Pattschull, Jefferson County Schools, Lakewood, Co. 1980.

Strauss, Alfred and Laura E. Lehtinen. "General Principles in the Education of the Brain-Injured Child." In Educating Children with Learning Disabilities. Ed. E. C. Frierson and W. B. Barbe. New York: Appleton-Century-Crofts, 1967, pp. 373-386.

Strongquist, Lucy. Director, GED Center, Longmont, Co. 1980.

Tarnopol, L. "Testing Children with Learning Disabilities." In Learning Disabilities: Introduction of Educational and Medical Management. Ed. L. Tarnopol. Springfield, Ill.: Charles Merrill, 1969, pp. 180-95.

Tarver, Sara and Daniel Hallahan. "Children with Learning Disabilities." In Teaching Children with Learning Disabilitie Ed. J. Kauffman and D. Hallahan. Columbus, Ohio: Charles E. Merrill. 1976, pp. 2-57.

__________ and Ronald Maggiore. "Cognitive Development in Learning Disabled Boys." Learning Disability Quarterly, Vol. 2, 1979, pp. 78-84.

Taylor, Ronald L. and Francisco I. Perez. "Neurological and Environmental Variables in Learning Disabilities." Academic Therapy, Vol. 15, 1980, pp. 339-346.

Torgeson, Joseph K. "Implications of the LD Child's Use of Efficient Task Strategies." Journal of Learning Disabilities, Vol. 13, 1980, pp. 364-371.

__________. "Factors Related to Poor Performance on Memory Tasks in Reading Disabled Children." Learning Disability Quarterly, Vol. 2, 1979, pp. 17-23.

__________. "The Role of Nonspecific Factors in the Task Performance of Learning Disabled Children: A Theoretical Assessment." Journal of Learning Disabilities, Vol. 10, 1977, pp. 27-34.

Touzel, S. W. "Secondary LD Curricula - A Proposed Framework." Learning Disabilities Quarterly, Vol. 1, 1978, p. 53.

Trantham, Carla Ross and Joan K. Pedersen. Normal Language Development: The Key to Diagnosis and Therapy for Language-Disordered Children. Baltimore: The Williams & Wilkins, 1976.

Travis, George. "A View from the Top." Adult Learning Problem Notes, January, 1980, p. 5.

__________. "An Adult Educator Views Learning Disabilities." Adult Literacy and Basic Education. Summer, 1979, p. 89.

U.S. Office of Education. Assistance to State for Education on Handicapped Children: Procedures for Evaluating Specific Learning Disabilities. *Federal Register*, 1977, Vol. 42, p. 65082-65085.

Valett, R. *Valett Developmental Survey of Basic Learning Abilities*. Palo Alto, Calif.: Fearon, 1969.

__________. *The Remediation of Learning Disabilities*. Palo Alto, Calif.: Fearon Publishers, 1967.

Vellutino, Frank R. et al. "Has the Perceptual Deficit Hypothesis Led us Astray?" *Journal of Learning Disabilities*, Vol. 10, 1977, pp. 375-384.

__________. *Dyslexia: Theory and Research*. Cambridge: The MIT Press, 1979.

Vogel, Susan A. "Morphological Ability in Normal and Dyslexic Children." *Journal of Learning Disabilities*, Vol. 10, 1977, pp. 35-43.

Vygotsky, L. S. *Thought and Language*. Trans. Ed. Eugenia Hanfmann and Gertrude Vokar. Cambridge: MIT Press, 1962.

Wallace, Gerald and James McLaughlin. *Learning Disabilities*. Columbus, Ohio: Merrill, 1975.

__________ and S. Kauffman. *Teaching Children with Learning Problems*. Columbus, Ohio: Charles E. Merrill, 1973.

Wallach, Geraldine P. and Sharon C. Goldsmith. "Language-based Learning Disabilities: Reading is Language Too!" *Journal of Learning Disabilities*, Vol. 10, 1977, pp. 178-182.

Weiderholt, J. L. "Educating and Learning Disabled Adolescent: Some Assumptions." *Learning Disabilities Quarterly*, Vol. 1, 1978, p. 11.

__________ and G. McNutt. "Assessment and Instructional Planning: A Conceptual Framework." In *Special Education for Adolescents: Issues and Perspectives*. Ed. D. Cullinan and M. H. Epstein. Columbus, Ohio: Merrill, 1979.

Weisel, Laura. *The London Procedure, Manual and Interpretation Guide*. Field-Test Edition, 1977.

Weisel, Laura. Director, Adult Basic Education. London, Ohio, 1978.

Wepman, Joseph M. "The Perceptual Basis for Learning." In Educating Children with Learning Disabilities. Ed. E. C. Frierson and W. B. Barbe. New York: Appleton-Century-Crofts, 1967, pp. 353-363.

__________. Auditory Discrimination Test. Chicago: Joseph M. Wepman, 1958.

Werner, Heinz. Comparative Psychology of Mental Development: New York: International Universities Press, 1973.

__________ and B. Kaplan. Symbol Formation: An Organismic Developmental Approach to Language and the Expression of Thought. New York: Wiley, 1963.

Wiig, Elisabeth and Eleanor M. Semel. Language Disabilities in Children and Adolescents. Columbus: Charles E. Merrell, 1976.

__________, et al. "Relationships among Language Processing and Production Abilities of Learning Disabled Adolescents." Journal of Learning Disabilities, Vol. 10, 1977, pp. 292-99.

__________. Language Assessment and Intervention for the Learning Disabled. Columbus: Charles E. Merrill, 1980.

Wilson, L. F. "Characteristics of Aphasia in Children." In Childhood Aphasia and Brain Damage. Ed. S. R. Rappaport. Narberth, Penn.: Livingston, 1964, pp. 8-9.

Wong, Bernice. "Theory in LD Research Part 2." Journal of Learning Disabilities, Vol. 12, 1979, pp. 63-67.

__________. "Research and Educational Implications of Some Recent Conceptualizations in Learning Disabilities." Learning Disability Quarterly, Vol. 2, 1979, pp. 63-67.

__________. "The Role of Theroy in Learning Disabilities Research: Part 1. An Analysis of Problems." Journal of Learning Disabilities, Vol. 12, 1979, pp. 585-595.

Woodcock, Richard W. and M. Bonner Johnson. Woodcock-Johnson Psycho-Educational Battery. Boston, Mass.: Teaching Resources Corp., 1977.

Zangwill, O. L. "Aphasia and the Concept of Brain Centers." In Psychology and Biology of Language and Thought: Essays in Honor of Eric Lenneberg. New York: Academic Press. 1978, pp. 119-131.

Zigmond, Naomi, et al. "Reading Instruction for Students with Learning Disabilities." Topics in Language Disorders, Vol. 1, 1980, pp. 89-98.

APPENDICES

A. Indicators of Learning Disabilities in Adults

B. Referral Procedures and Communications

C. Sample Educational Evaluation Report

D. Final Reports and Progress and Growth Chart for Individual Students

E. List of Materials

F. List of Journals/Newsletters

G. Kulick Foundation

APPENDIX A.

Indicators of Learning Disabilities in Adults

Developed by:
Paula Pattschull, M.A.
Learning Disabilities Specialist
Director, Academic Development Services
6605 West 38th
Wheat Ridge, CO. 80033
(303)423-1243

For:
Intake information at this clinic
The Kulick Foundation
Colorado Adult Basic Education Special Project
Vocational Rehabilitation Counselors in Colorado

This questionnaire is based on experience with ALDs and is intended to be used as part of a comprehensive screening procedure to identify adults with potential learning disabilities. A high percentage of positive indicators will be used in conjunction with an in-depth intake interview and screening test data to refer an individual for psychoeducational diagnostic testing for L.D.

Preliminary research with this instrument: May, 1979

These indicators may not be reprinted or used in part or entirety without permission from the author until publication.

LD Indicatiors: Screening Checklist

NAME ____________________

Age: ____________________

Referred by: ____________________

Optional:

Date of Birth: ____________________

Time of Birth: ____________________

Place of Birth: ____________________

YES	NO	
		Problems with birth and/or early development (medical)
		Unusual medical problems any time in life (concussion, seizure, etc.)
		Adverse drug reaction to common medication
		Hyperactive behavior as a child
		Medication for hyperactivity
		Medication for depression at any time
		Hearing problems
		Vision problems
		Visual vertical imbalances (eye tracking, convergence problems)
		Unusual, stressful difficulty with directions, driving, perceptual distortions
		Particular difficulty with cognitive functioning some days that cannot be explained in normal ways
		Other family members experiencing learning problems
		Tested for learning problems at hospital as a child
		Tested for learning problems at hospital as an adult
		Difficulty with school learning not due primarily to cultural, environmental, or emotional factors
		Placement in special education program in school for part or all of school years with poor progress
		Special testing at school at any time
		Work with tutor as a child
		Work with speech/language specialist
		Work with occupational therapist

YES	NO	
		Attended a special school
		Difficulty in job situations due to learning problem
		Noticeable problems with memory
		Noticeable problems with auditory information
		Noticeable problems with visual information
		Family problems because of learning problem as a child
		Family problems because of learning problem as an adult
		Peer relationship problems because of learning problem as an adolesent
		Peer relationship problems because of learning problem as a child
		Peer relationship problems because of learning problem as an adult
		Optional
		When you are in trouble do you find yourself becoming aggressive and hostile
		When you are in trouble do you find yourself withdrawing from the situation

APPENDIX B.

COLORADO ADULT EDUCATION
Special Demonstration Project: Learning Disabilities

Learning Disabilities Specialists
Paula Pattschull, M.A.
Diane Tucker, M.A.

March 15, 1980

Dear ABE Directress/Director:

You may be aware that Colorado has two small federal grants this year to help adults with learning disabilities.

The grants are administered through the Colorado Department of Education. The Denver Metro area grant was awarded to the CSPS Foundation which is affiliated with Academic Development Services, a clinic located in Wheat Ridge serving persons with learning disabilities.

Enclosed please find information sheets explaining the goals and services of the project.

Due to a halving of the original proposal entailing major revisions and delayed monies, the project got a late start last fall and had to be curtailed in scope of services offered.

As of the end of this month, approximately 20 students have received diagnostic evaluation and interpretive conferences with their teachers at local A.E. program sites. About a half of these students were accepted into individual remedial programs with L.D. specialists, and are currently receiving these special services in a clinical setting.

A majority of the students served thus far have been referred from the Jefferson County ABE program. Among the many reasons for this are: staff and administrative support and encouragement in the original development of the project, delineation of specific student needs, requests for assistance in this area, teacher preparation, and geographic feasibility for project staff.

At this time I would like to extend a special invitation to each of your programs to take advantage of the grant services this spring. Although time and resources are limited, we would be happy to do our best in meeting your needs.

For more information, please contact me at 423-1243 or 1241 on Tuesdays or Thursdays.

Yours truly,

Paula Pattschull

Paula Pattschull
Project Director

Enclosures:
(Information and Flow chart on Special project - Procedures for Referral
Information background on L.A.- L.D. Classification According to Severity)

CSPS Foundation • 6605 W. 38th Ave. • Wheat Ridge, Colorado 80033 • (303) 423-1241

COLORADO ADULT EDUCATION
Special Demonstration Project: Learning Disabilities

Learning Disabilities Specialists
Paula Pattschull, M.A.
Diane Tucker, M.A.

Procedures for Referral to Special Project: Learning Disabilities

Students referred: Individuals with learning disability are those whose intelligence falls within a normal range, (not retarded) but who have extreme difficulty with the processing of information on a neurophysiological basis. These processing deficits often create many problems within educational settings and some degree of difficulty within the general environment. As a rule, most of the students will be functioning at your lowest level, 0-4. They will be motivated and trying hard, but not making much progress.

1. Call our office for referral packet, and give us student's name, age, estimated educational level, general problem and length of time in your program.

2. Referral packet will be sent to you. It will include:

   a) Release of information forms which the student will need to sign and you will send to high school (if feasible) for transcripts; to any other agency that may have done psychological (I.Q.) or educational testing on student in past 10 years.

   b) L.D. indicators checklist which can be administered in 5-10 minutes.

   c) Intake history form: Fill out for student form briefly. It is not necessary to complete the form in detail as we will do this at the first testing session.

3. Call us to make an appointment for the first testing session with the student.

We can serve more students if they can get transportation to the clinic. However, if this is impossible, we may be able to do on-site work on a limited basis. (Exception: A diagnostician can go out to any program in the central Denver Area).

The testing takes 2 sessions of 2-3 hours. Then, the diagnostician scores the test, interprets results and writes a formal evaluation report. When this is completed, an interpretive conference is scheduled and conducted by the L.D. Diagnostician at the AE program site for the student and any family members, and teachers working with the student.

After the conference, specific suggestions on how to work with the student will be given, materials and methods, demonstrations will be conducted, and short-term remedial programs may be set up.

WHEN YOU CALL IN TO THE CLINIC, PLEASE SPECIFY VERY CLEARLY TO THE SECRETARY THAT YOU ARE CALLING ABOUT THE CSPS SPECIAL LEARNING DISABILITIES PROJECT.

CSPS Foundation • 6605 W. 38th Ave. • Wheat Ridge, Colorado 80033 • (303) 423-1241

FY '80 PROPOSAL
ADULT EDUCATION
SPECIAL DEMONSTRATION PROJECT

Project Category: Special Needs Group - Handicapped: Development of Appropriate Services for the Learning Disabled

Applicant Organization: CSPS Foundation

Goal of Project: The goal of this project is to directly serve individuals enrolled in adult education programs whose life potentials have been severely limited by learning disabilities and whose educational levels are at a low level by providing diagnostic testing and evaluation, counseling and prescriptive individualized remediation, and then consulting with ABE staff in modifying these individuals educational programs so that they can make significant academic progress and personal adjustment to their handicap.

OBJECTIVE COMPONENTS

Staff Development

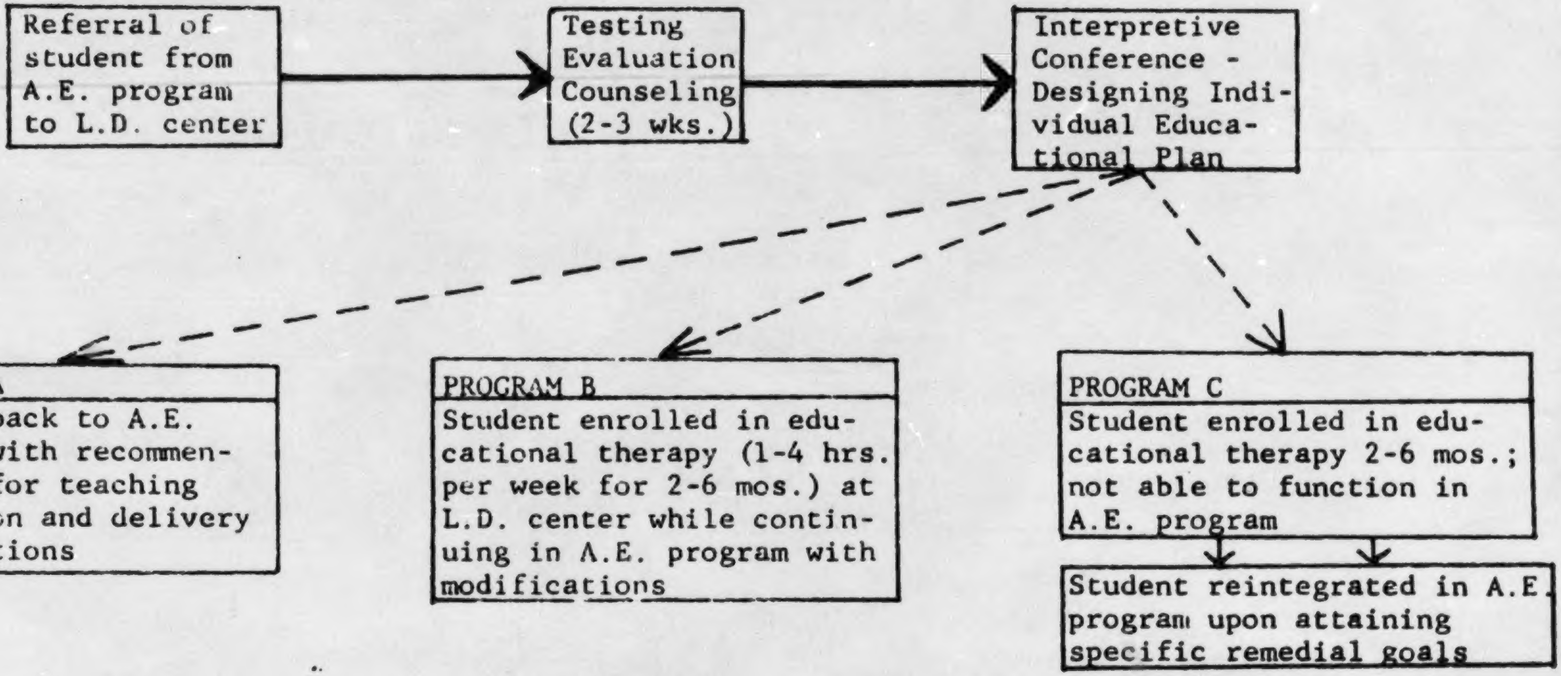
Direct Service - Diagnostic Evaluation
- a. Testing
- b. Interpretation
- c. Consulting

Direct Service - Educational Therapy
- a. Academic work
- b. L.D. Remediation/Compensation
- c. Counseling

Consulting and Staff Development
- a. Re-integration
- b. Resource handbook

SPECIAL DEMONSTRATION LEARNING DISABILITIES PROJECT

FLOW CHART OF ACTIVITIES



Referral of student from A.E. program to L.D. center

Testing Evaluation Counseling (2-3 wks.)

Interpretive Conference - Designing Individual Educational Plan

PROGRAM A
Student back to A.E. program with recommendations for teaching adaptation and delivery modifications

PROGRAM B
Student enrolled in educational therapy (1-4 hrs. per week for 2-6 mos.) at L.D. center while continuing in A.E. program with modifications

PROGRAM C
Student enrolled in educational therapy 2-6 mos.; not able to function in A.E. program

Student reintegrated in A.E. program upon attaining specific remedial goals

Degree of Handicap			
	Student mild L.D. or not L.D.; can be served effectively within A.E. program	Student moderate to severe L.D. but functioning within A.E. program with some success	Student severe L.D.; not able to function in A.E. program without remedial treatment

Explanation: Programs A, B and C represent outcomes of evaluation depending on severity of handicap, student's needs and present A.E. program. The above cycle depicts programming for one individual student with possible L.D. A number of such cycles will be occurring simultaneously (although starting at different dates) throughout the major portion of this special project. New referrals for evaluation will be accepted at any time during Months II-X.

State of Colorado

DEPARTMENT OF SOCIAL SERVICES
DIVISION OF REHABILITATION
1575 SHERMAN STREET
DENVER, COLORADO 80203

RICHARD D. LAMM
Governor

ARMANDO R. ATENCIO
Executive Director

MARK E. LITVIN, PH.D
Rehabilitation Director

VOICE PHONE and MCM TTY
Administrative Office and
Client Information
303-839-2285

Rehabilitation Director
303-839-2652

June 19, 1979

Ms. Paula Pattschull, Educational Director
Academic Development Services
Colorado Department of Education
State Office Building - 3rd Floor
201 East Colfax
Denver, Colorado 80203

Attention: Dr. Elizabeth Waggener
Director of Adult Education

Dear Ms. Pattschull:

I am sending this letter in response to your recent request, received June 12th and our telephone conversation of June 18th.

I have reviewed Part III, Cooperative Arrangements, which is part of your draft application to the Colorado Adult Education Special Projects Proposal. The Division of Rehabilitation will provide vocational rehabilitation services to those handicapped individuals who have been determined eligible to receive our services. Learning Disabled individuals needing evaluation, treatment, (medical, visual or neurological), would receive services on the basis that our involvement will prepare the handicapped individuals for competitive employment.

Thank you for the opportunity to review the information you have sent to us. May we wish you every success in your efforts. Please feel free to contact us if we can be of any further assistance.

Sincerely yours,

David L. Gies
Facilities Specialist

DLG:w

APPENDIX C.

COLORADO ADULT EDUCATION
Special Demonstration Project: Learning Disabilities

Learning Disabilities Specialists
Paula Pattschull, M.A.
Diane Tucker, M.A.

EDUCATIONAL EVALUATION

Name: L
Age: 52
Address:
, CO
Program: Jefferson County Adult Education

Dates of Testing: Nov. 27, 29 and Dec. 4, 1979
Date of Interpretive Conference: December 18, 1979
Examiner: Paula Pattschull, M.A. Learning Disability Specialist

Reason for Referral:

L was referred for evaluation because of a history of learning problems and the presence of a high degree of L.D. indicators on a screening checklist administered by Jefferson County Adult Education staff.

Background Information:

L lives with his wife, G . They have four grown children. L is a mill operator for C . His wife is an office coordinator for the

Throughout the testing L related a number of the difficulties he encounters in his job because of his learning problems, and how he compensates for the problems. He appears to cope with job requirements in positive, effective ways. For example, he notes that he has memorized a great deal of information for forms he uses in his work. L also mentioned that, at times, he also feels embarassed in social situations due to his low educational level and learning problems.

L general health is good, although his most recent physical found high blood pressure and high blood sugar level. L wears bifocals for vision corrections. His hearing is good. When L was seven, he witnessed a brother's death. At age nine he was in an accident that could have resulted in concussion. Another childhood factor that might have caused learning problems was L left-handedness. He recalls that when he was a young child in school his teachers attempted to have him use his right hand, but L left dominance persisted.

L understands the social stigma attached to persons without reading and writing skills, and successfully kept his problems hidden, particularly in work situations. L feels that learning is a real struggle for him, and he has "to work harder than other people to acquire the same skills."

Educational History:

L attended crowded public schools in St. Paul, Minnesota, until he was in the 3rd grade. Then he was placed in a special occupational school where he still was not helped in any effective way. L quit school at the age of 15. Since the program was ungraded, there is no way to determine what level of instruction L completed.

In 1974, L went to Red Rocks Community College to get help with reading. There he received instruction with a tutor and through a series of books and tapes.

At the present time L would very much like to continue his learning. His goal is to attain a high school diploma.

Tests Administered:

Woodcock-Johnson Psycho-Educational Battery
  Part I: Tests of Cognitive Ability
  Part II: Tests of Academic Achievement

(Please refer to enclosed test description for more detailed information on this battery).

Test Results:

Page 1 of Part I - Tests of Cognitive Ability (see enclosed copy of test record booklet) shows L performance for the various clusters of abilities. The darkened-in bands depict his functioning as compared to other fifty-two-year-olds in this country. The center cross-hatched area on the test booklet represents an average range of performance. Scores on this test battery are always plotted as bands (ranges) rather than points on a line to give greater accuracy and validity to the results. Since a test is merely a single sample of a person's true performance, these bands show the range within which L true ability would fall.

L overall abilities, including his learning difficulties are graphed at the 15th-18th percentile. His verbal ability scores are shown as below the average range, and are very likely deflated because of L problems with word retrieval. In a number of test items, L knew the information asked of him and could relate many details of the correct answer; however, he could not give the specific term needed for a correct response. Therefore, on all subtests requiring specific word answers retrieved from memory, L scores are somewhat below his actual level of knowledge.

On L profile (Part I - page 1) his reasoning abilities are substantially stronger than his perceptual and short-term memory capacities. This pattern is common with learning disability. Of the three academic aptitudes reading is the strongest area as shown here.

Individual subtest scores are plotted on the Subtest Profile. (See Part I - page 2 copy enclosed). L summary (middle) score was 503. A vertical line was drawn at this point through his profile. Scores to the right of this line can be considered strengths; scores falling to the left show weaknesses. The 12 subtests listed are arranged in order of simple (Visual Matching) to complex (Analogies) tasks. Grade level equivalents are listed at the top of the graph.

L profile shows a fair amount of scatter between subtests. Visual-spatial relationships and memory scores appear to be the weakest; strengths are shown in some auditory, verbal and reasoning tasks. Overall performance level is between 5th and 6th grade level.

Page 1 of Part II - Tests of Achievement (see enclosed copy) depicts L performance in the four major academic areas. L reading and written language cluster scores were too low to appear on the profile. This situation is common for older adults not having completed their schooling and having any type of learning problems.

The graph on page 2 - Part II (enclosed) shows L performance on each individual subtest. His median (average) score of 1956 is represented as a vertical line through the graph. Again, as on the Part I Profile, strengths and weaknesses can be noted by comparing a particular score band with the central line. Score bands touching the line cannot be considered significant strengths or weaknesses. Listed along the far left side of the profile are the four major academic areas: Reading, Math, Written Language and Knowledge. Thus, the first six subtests listed (#s 13, 5, 14, 8, 12 and 15) all pertain to reading skills. Some of these subtest scores were obtained from Part I of the total battery; they are listed again here with Part II scores for complete reference.

L general profile here shows wide discrepancies (i.e., range of scores from 1.4 to 12.9 grade equivalents) which usually indicates the presence of specific learning disability. Within the reading area, L auditory and receptive vocabulary abilities are strong. His actual reading skills (tests # 13 and # 15) are poor, although I has developed a low-level phonics foundation from his previous reading instruction. Within the math area, L higher score is applied problems(#17) shows good reasoning abilities. Written language scores, particularly spelling, were very low. In general environmental knowledge areas, L did quite well which shows potential for learning. (Humanities is a poorly constructed test for adults and the score should be disregarded).

A type of overall summary of these test results is found on the "Achievement-Aptitude Profile" shown on the bottom half of Part I - page 2 of the test record booklet (copy enclosed). The scores in the first boxes are

L cluster scores for the three major academic achievement areas. They represent his present level of skills in these areas. The second boxes from the left ("Expected Cluster Scores"), represent aptitudes, or underlying abilities in each of the areas. The numbers in the third set of boxes are the differences between actual skills and expected or predicted scores. A difference score of 0 would mean that an individual was functioning at exactly the level they were expected to be at. Positive and negative "Difference Scores" show stronger and weaker performance than expected, respectively. The larger the difference, the stronger (positive numbers) or the weaker (negative numbers) a person's skills are.

Given this interpretation, L present academic skills are far below his intellectual capabilities. SD = severe deficit; MD = moderate deficit.

Summary:

From this evaluation it appears clear that L does have specific learning disability which has made learning very difficult for him. The term learning disability applies to persons whose intelligence is normal, but have extreme difficulty with the processing of information on a neurophysiological basis. L specific difficulties are with visual perception and memory --- mainly long term retrieval.

Recommendations:

It is recommended that L enroll in the A.E. program and commence work in the math lab as soon as possible. L work in math should start with basic multiplication and division facts (taught simultaneously). Emphasis should be on the process involved rather than on rote memorization.

Due to L age and very limited funding for remedial work under this grant, L will not be able to enroll in an L.D. program unless he can procure funding from another source. However, it is felt that L is well motivated and could make sizeable gains educationally through an individualized educational therapy program. Such remedial work should concentrate on ways to strengthen L visual and memory retrieval deficits as new learning with language structure and sound-symbol correspondences (reading, spelling, etc.) proceeds. It is recommended that work with an educational therapist be scheduled twice weekly and continue for approximately three months before L starts work in the reading lab at A.E.

Paula Pattschull

Paula Pattschull, M.A.
Learning Disabilities Specialist

APPENDIX D.

PROGRESS AND GROWTH CHART

Student (sex) age
T.G. M 48
LD Severity: Hours of Therapy
severe 12

ACADEMIC

	Date 5/80	Date
Letter-word Identification	1.3	
Word attack	2.0	
Reading comprehension	1.0	
Spelling	1.3	

PERSONAL DEVELOPMENT

	NC	Min.	Mod.	Maj.
Confidence in ability to learn				X
Understanding of problems				X
Acceptance of problem				X
Strategies for learning				X
Self-confidence				X
Helpful in employment		X		
Helpful in life skills	X			
Helpful in relating to people	X			

PROCESS RATING

Levels	Ability Profile		N.C.	Slight	Mod.	Signif.
I.	S	Attention	X			
II.	W	Vis. discrim. and sequencing			X	
	W	Aud. discrim. and sequencing			X	
III.	A	Short-term memory		X		
	S	Long-term memory	X			
IV.	W	Vis. closure			X	
	W	Aud. closure			X	
	W	Lang. closure			X	
	S	Conceptualization	X			
V.	A	Self-monitoring			X	
	W	Intermodality integration				X

(1)
Name: T.G.
Age: 48
ABE Program: Adams County

a). Date (May 19 and 20, 1980) of testing/evaluation with interpretive conference on June 1, 1980.

b). Assigned to plan C and received 12 hours of individual educational therapy over a period of two months with Kathryn LeVeck at the CSPS Foundation Clinic Center.

(2) From the evaluation, it appears clear that T. does have a severe learning disability which has made learning difficult for him. T's specific difficulties are with visual perception, memory and word retrieval for oral speech. Many signs of mirror image perception appear in T's writing and reading along with much confusion in directionality. Poor fine motor control made writing extremely tedious. In addition, aphasic tendencies affect T's ability to read orally. On the task response model T's primary deficit is in level II perception.

(3) T's program has focused on developing sound-symbol relationship and developing strategies to eliminate reversals in both numbers and letters. He has made significant progress in both areas.

(4) T. was extremely anxious about starting educational therapy due to many failures in reading in the past. Much of his anxiety disappeared as he began to understand his severe disabilities and to make progress. He has developed decoding strategies and techniques for minimizing reversals and confusions in his reading and writing.

(5) T. is going to continue individual therapy at the clinic and will be funded by his employer. He hopes to be able to begin a program in adult education at some point in the future.

Kathryn LeVeck
Educational Therapist

PROGRESS AND GROWTH CHART

Student (sex) age
C.R. M
LD Severity: Hours of Therapy
Moderate 14

ACADEMIC

	Date	Date
Letter-word identification	2/80	
Word attack	2/80	
Reading comprehension	2/80	
Spelling		

PERSONAL DEVELOPMENT

	NC	Min.	Mod.	Maj.
Confidence in ability to learn				✓
Understanding of problems				✓
Acceptance of problem				✓
Strategies for learning				✓
Self-confidence				✓
Helpful in employment			✓	
Helpful in life skills			✓	
Helpful in relating to people			✓	

PROCESS RATING

Levels	Ability Profile		N.C.	Slight	Mod.	Signif.
I.	S	Attention		✓		
II.	W	Vis. discrim. and sequencing				✓
	W	Aud. discrim. and sequencing				✓
III.	W	Short-term memory				✓
	A	Long-term memory			✓	
IV.	W	Vis. closure				✓
	W	Aud. closure				✓
	S	Lang. closure			✓	
	S	Conceptualization			✓	
V.	A	Self-monitoring				✓
	W	Intermodality integration			✓	

Name: C.R.
Age: 23
ABE Program: Jefferson County Adult Education Program

Date: During the mid part of February 1980, testing/evaluation was given with the interpretive conference (staffing) held at CSPS Foundation clinic.

C. was assigned to Plan B and received 13 hours of individualized educational therapy over a period of one month with Dian Bates and Paula Pattschull.

Results of the Woodcock-Johnson Psycho-Educational Testing demonstrated that C's reading abilities were above average for his age group; his math skills were in the average range; his written skills, substantially below the average range. C's combined scores, however, indicate severe deficits in all the academic skill areas (reading, math, and written language). The test scores further indicate a mild Learning Disability of a perceptual nature.

C's program at the clinic involved the Glass-Analysis Reading Program and Tracking exercises. The use of flash cards and games, such as Concentration (individual words matched with their definitions) and a constant review of material from previous lessons was aimed at teaching strategies that C could use outside the clinic.

C indicates that he feels good about himself now that he understands more about his particular Learning Disability and how it applies to his learning capabilities. One of the strong strategies that C has developed is his monitoring of his work. He has become quite proficient at this learned skill. He states that when he monitors his work correctly he feels that his confidence increases for the next learning tasks he will face in every day living.

C and his wife attended the last teaching session together. They were anxious to know what type of materials and activities they could continue to use at home in order to maintain C's progress and enthusiasm. They met with Paula Pattschull, Project Director, following the evening session.

Paula gave them some concrete ideas of ways they could work on skills at home. In addition, C plans to be in touch with the staff at Jefferson County Adult Education Program to re-enroll with that program to continue his studies toward the GED, General Education Development testing.

Dian Bates
Educational Therapist

PROGRESS AND GROWTH CHART

Student (sex) age
LS M 39

LD Severity: Hours of Therapy
Severe 14

ACADEMIC

	Date 5/80	Date
Letter-word Identification	2.0	
Word attack	1.8	
Reading comprehension	2.5	
Spelling	2.3	

PERSONAL DEVELOPMENT

	NC	Min.	Mod.	Maj.
Confidence in ability to learn				X
Understanding of problems				X
Acceptance of problem				X
Strategies for learning				X
Self-confidence				X
Helpful in employment				X
Helpful in life skills	X			
Helpful in relating to people				X

PROCESS RATING

Levels	Ability Profile		N.C.	Slight	Mod.	Signif.
I.	W	Attention			X	
II.	W	Vis. discrim. and sequencing			X	
	W	Aud. discrim. and sequencing			X	
III.	W	Short-term memory		X		
	A	Long-term memory		X		
IV.	W	Vis. closure			X	
	W	Aud. closure			X	
	A	Lang. closure		x		
	A	Conceptualization			X	
V.	W	Self-monitoring				X
	W	Intermodality integration				X

(1)
Name: L.S.
Age: 39
ABE Program: Jefferson County Adult Education

a). Date (May 27 and 30, 1980) of testing/evaluation with interpretive conference on May 30, 1980.

b). Assigned to plan C and received 14 hours of individual educational therapy over a period of two months with Kathryn LeVeck at the CSPS Foundation Clinic Center.

(2) L. was evaluated and diagnosed as having a specific language learning disability with both auditory and visual perception. Memory retrieval and labelling difficulties often compound his visual and auditory processing deficits. Level II (perception and differentiation) is L's primary processing deficit level on the task response model.

(3) L's remedial program focused on auditory and visual integration skills as well as auditory and visual discrimination skills. L. has made significant progress in developing sound-symbol correspondences in reading and spelling. His learning style and response pattern was very impulsive. L. has learned many strategies and techniques for improving accuracy when decoding and encoding. Self-monitoring skills have also improved.

(4) Although L's therapy has been very short-term, his level of confidence and motivation has increased substantially. He appears to have a better understanding of his learning disability and learning style. He is now aware of ways to compensate for his learning deficits.

(5) L. is hoping to continue in educational therapy and be funded by workman's compensation or vocational rehabilitation. L. is presently unemployed due to a back injury. Eventually, he would like to pursue a G.E.D. at Adult Education in Jefferson County.

Kathryn LeVeck
Educational Therapist

PROGRESS AND GROWTH CHART

Student (sex) age
K. B M. 21
LD Severity: Hours of Therapy
Severe LD 21

ACADEMIC

	Date 4/22/80	Date 6/16/80
Letter-word identification	1.8	2.3
Word attack	1.6	3.2
Reading comprehension	1.8	2.7
Spelling	1.7	2.4

PERSONAL DEVELOPMENT

	NC	Min.	Mod.	Maj.
Confidence in ability to learn			✓	
Understanding of problems				✓
Acceptance of problem			✓	
Strategies for learning			✓	
Self-confidence				✓
Helpful in employment		✓		
Helpful in life skills			✓	
Helpful in relating to people		✓		

PROCESS RATING

Levels	Ability Profile		N.C.	Slight	Mod.	Signif.
I.	A	Attention				✓
II.	W	Vis. discrim. and sequencing				✓
	W	Aud. discrim. and sequencing				✓
III.	W	Short-term memory			✓	
	S	Long-term memory		✓		
IV.	W	Vis. closure		✓		
	W	Aud. closure		✓		
	S	Lang. closure		✓		
	S	Conceptualization		✓		
V.	W	Self-monitoring		✓		
	W	Intermodality integration				✓

Name: K.B.
Age: 21 years
ABE Program:

Date: In the mid part of April 1980, Testing evaluation was administered with the interpretive conference (staffing) held at the CSPS Foundation clinic on May 27, 1980.

K. was assigned to Plan C and received 21 hours of individualized educational therapy over a period of one month with Dian Bates and Paula Pattschull at the CSPS Foundation clinic.

Results of the Woodcock-Johnson Psycho-Educational Battery demonstrated that K. 's strongest cluster of scores is in the reasoning area; his weakest clusters were with short-term memory and written language abilities. K 's specific Learning Disability is related to poor intergration of visual and auditory information.

Although it has been determined that K has above average intelligence, his demonstrated academic skills are far below the average for his age group. K is functioning at Level IV (understanding/Cognition Level on the Task Response Approach chart). K 's conceptual and reasoning level is extremely high. The major learning process at this level is to recognize, identify, and associate new inferred meanings to previously learned concepts.

K 's program has stressed the need for a strong monitoring system. The Monterey Reading Program and tracking exercises have attempted to give K the skills to develop a monitoring system for his own work. The Glass-Analysis Program has been used to give focus to the sequencing of letters in spelling skills.

K. is enthusiastic about his progress. He feels that the strategies he is learning are providing him with confidence in some job-related tasks. He has given evidence that his long-term memory skills have increased. With the results of some post-testing with Ms. Paula Pattschull at the CSPS Foundation clinic, K expressed renewed hopes of being able, at last, to think in terms of a college education further "down-the-road" -- "after lots of hard work!

K is in the process of contacting Voc-Rehab in Denver. He is requesting from that agency the means whereby he can continue an educational therapy program.

Dian Bates
Educational Therapist

PROGRESS AND GROWTH CHART

Student (sex) age
G.L. M 19

LD Severity: Hours of Therapy
moderate 25

ACADEMIC

	Date 3/80	Date 6/30
Letter-word identification	9.0	10.0
Word attack	7.0	12.0
Reading comprehension	7.0	11.0
Spelling	4.5	6.0

PERSONAL DEVELOPMENT

	NC	Min.	Mod.	Maj.
Confidence in ability to learn				X
Understanding of problems				X
Acceptance of problem				X
Strategies for learning				X
Self-confidence			X	
Helpful in employment				X
Helpful in life skills		X		
Helpful in relating to people	X			

PROCESS RATING

Levels	Ability Profile		N.C.	Slight	Mod.	Signif.
I.	A	Attention		X		
II.	W	Vis. discrim. and sequencing				X
	W	Aud. discrim. and sequencing				X
III.	X	Short-term memory				X
	X	Long-term memory			X	
IV.	W	Vis. closure			X	
	W	Aud. closure			X	
	S	Lang. closure		X		
	W	Conceptualization				X
V.	W	Self-monitoring				X
	W	Intermodality integration				X

K

(1)
Name: G. L.
Age: 19
ABE Program: Jefferson County Adult Education

a). Date (March 11, 1980) of testing/evaluation with interpretive conference on April 7, 1980.

b). Assigned to plan B and received 25 hours of individual educational therapy over a period of two months with Kathryn LeVeck at the CSPS Foundation Clinic Center.

(2) Level II Perception and Level III Memory labelling.

G. has a specific learning disability with processing deficits in visual perception, short-term memory and sensory integration. His visual problems were characteristic of dyslexia (with many reversals, rotations and mirror images.) The major breakdown in skills comes with inability to integrate what he sees and hears into writing. These learning problems have created many learning difficulties for G. G's deficit on the task response model fall in level II Perception and Level III Memory.

(3) G's remedial program focused on auditory and visual integration skills as well as auditory and visual discrimination skills. G. made significant progress in developing sound-symbol relationships in correct sequences. He was able to significantly improve his spelling and reading skills. Short-term memory skills were improved by oral rehearsal and note-taking. New self-monitoring skills substantially increased skill development in all areas.

(4) G. reported that he now had a better understanding of his learning difficulties and way to compensate for them. He was finally able to analyze and label his processing deficits. G. stated that writing things down to aid long term memory was a good compensatory technique for him.

(5) G. was able to pass his G.E.D. exam in April, 1980. However, he is still determined to retake the English section to get an even higher score. He is now working part-time and hopes to gain permanent employment in the near future. G. reported that by oral rehearsal of direction, note-taking and his improved written language skills, he can be successful and confident in seeking employment

Kathryn LeVeck
Educational Therapist

PROGRESS AND GROWTH CHART

Student (sex) age
R.B. m 21
LD Severity: Hours of Therapy
Severe 25

ACADEMIC

	Date	Date
Letter-word identification	2.0	
Word attack	1.5	
Reading comprehension	2.0	
Spelling	1.0	

PERSONAL DEVELOPMENT

	NC	Min.	Mod.	Maj.
Confidence in ability to learn				
Understanding of problems				
Acceptance of problem				
Strategies for learning				
Self-confidence				
Helpful in employment				
Helpful in life skills				
Helpful in relating to people				

PROCESS RATING

Levels	Ability Profile		N.C.	Slight	Mod.	Signif.
I.	A	Attention				X
II.	W	Vis. discrim. and sequencing				X
	W	Aud. discrim. and sequencing			X	
III.	W	Short-term memory				X
	S	Long-term memory		X		
IV.	W	Vis. closure			X	
	W	Aud. closure			X	
	S	Lang. closure		X		
	S	Conceptualization		X		
V.	W	Self-monitoring				X
	W	Intermodality integration			X	

(1)
Name: R.B.
Age: 21
ABE Program: Adult Education Tutorial Program, Denver, Colorado

a). Date (mid part of May 1980) testing/evaluation was administered with the interpretive conference (staffing) held at the Adult Education Tutorial Program (AETP) on May 22, 1980

b). Assigned to Plan B and received 12 hours of individualized educational therapy over a period of one month with Dian Bates at the CSPS Foundation.

Results of the Woodcock-Johnson Psycho-Educational Battery demonstrated that R.'s cognitive ability was well below the average range for his age group. The weakest area was written language ability with reasoning being stronger than the other scores. Sound-symbol relationships were extremely weak, complicating R's attempts at intergrating fine motor skills with the auditory and visual skill areas.

R. is functioning at Level IV (Understanding/Cognition Level on the Task Response Approach chart). R. understands basic concepts of language and is able to apply his understanding to new meanings. Inferences and monitoring responses are weak areas which are being strengthened.

The remedial program has relied heavily on the L.E.A.D. Program and the Monterey Reading Program, with a variety of additional activities to re-enforce concepts in a visual and concrete manner.

R's progress was steady. The carry-over from lesson-to-lesson and week-to-week has been excellent.

Due to the time element, we did not work on the math concepts.

R's more complete understanding of his learning problems has led to more self-confidence in his daily activities He says that he is much freer in his acknowledgement of certain job-related problems and is not "afraid" to seek help from his peers. He has related episodes where he has confronted fellow employees in a positive, self-confident manner following comments made concerning his lack of capabilities in recording information correctly.

R. also feels that he has learned to "really listen", especially to himself as he repeats words and phrases before committing them to paper.

Plan are already in progress for Ray to continue in the Adult Educational Tutorial Program. Beginning in July 1980, he will attend the All Saints Episcopal Church Center. George Anderson, ABE Coordinator at AETP, will be supervising the tutors (one in reading and one in math) working with R.

Given the progress observed in this 12 hour educational program, it is realistic to assume that R will continue to progress steadily if the tutors at AETP make use of a structured linguistic approach. Such will be the recommendation to that staff.

Dian Bates
Educational Therapist

PROGRESS AND GROWTH CHART

Student (sex) age
I.I. - F

LD Severity: Hours of Therapy
Moderate 26½

ACADEMIC

	Date	Date
Letter-word Identification	N/A	
Word attack	N/A	
Reading comprehension	N/A	
Spelling	N/A	

PERSONAL DEVELOPMENT

	NC	Min.	Mod.	Maj.
Confidence in ability to learn				X
Understanding of problems				X
Acceptance of problem				X
Strategies for learning				X
Self-confidence				X
Helpful in employment			X	
Helpful in life skills			X	
Helpful in relating to people		X		

PROCESS RATING

Levels	Ability Profile		N.C.	Slight	Mod.	Signif.
I.	A	Attention			X	
II.	W	Vis. discrim. and sequencing			X	
	W	Aud. discrim. and sequencing			X	
III.	W	Short-term memory				X
	W	Long-term memory			X	
IV.	—	Vis. closure N.A.				
	—	Aud. closure N.A.				
	—	Lang. closure N.A.				
	W	Conceptualization			X	
V.	W	Self-monitoring				X
	—	Intermodality integration N.A.?				

Name: T.T.
Age: 20
ABE Program: Denver Training and Employment Administration (DETA), Denver, Colorado

Date: In the latter part of April 1980, Testing/evaluation was administered with the interpretive conference (staffing) held at DETA/ABE Unit, 1440 Fox Street, Denver, Colorado on May 1, 1980.

T. was assigned to Plan B and received 26½ hours of individualized educational therapy over a period of one and a half months with Dian Bates at the DETA Adult Basic Education Unit.

Results of the Key Math Diagnostic Arithmetic Test demonstrated that T. had many confusions in basic concepts of math. An equivalent grade level was measured at 4.8.

T. exhibited great difficulty in addition and subtraction especially when any type of re-grouping of numbers was required. There was no sequential processing of the steps necessary to solve a problem. T's practical mathematical knowledge was also weak, especially in the areas of measurement, time, and money.

T. continued the use of the following texts since she had been working in them in her class at DETA/ABE: Programmed Math for Adults (McGraw-Hill), Basic Essentials of Mathematics, Book #1 (Steck-Vaughn Book Company), and Number Power, The real World of Adult Math (Contemporary Books, Inc.,). T spent a part of each session in: drill of number facts (flash cards and pen and paper exercises), use of graph paper for proper placement of numbers, exercises in the concept of tens with bundles grouped in tens, oral word problems to strengthen the logical thinking process with regards to mathematical concepts. All of the individualized sessions were focused on addition and subtraction concepts.

On May 30th, T. was tested at the Rockwell Institute, Denver, Colorado, as a possible candidate for training at that institute in the vocational area of Word Processing. T reported back that the test administrator complimented her on her over-all test performance and indicated that the math section score was quite acceptable to their entrance requirements. T feels strongly that she would not have been successful at this attempt for training had it not been for the diagnosis and prescription for math focusing on her learning problem in that skill area.

On June 9th, T began her training at the Rockwell Institute with a new sense of confidence and achievement. She indicated, in a recent phone conversation, that she feels she is handling her training program with more assurance of her ability to succeed and cope with the situations that come each day.

Following her training and entry into the work-world, T hopes to be able to continue with some study at Denver's Community College. She is extremely excited about the new possibilities that she feels has been opened to her through her intensive work with this project.

Dian Bates
Educational Therapist

PROGRESS AND GROWTH CHART

Student	(sex)	age
P.V.	F	33

LD Severity:	Hours of Therapy
Severe	28

ACADEMIC

	Date 2/12/80	Date 4/22/80
Letter-word Identification	1.8	2.2
Word attack	1.6	2.4
Reading comprehension	2.0	2.6
Spelling	2.8	—

PERSONAL DEVELOPMENT

	NC	Min.	Mod.	Maj.
Confidence in ability to learn				
Understanding of problems				
Acceptance of problem				
Strategies for learning				
Self-confidence				
Helpful in employment				
Helpful in life skills				
Helpful in relating to people				

PROCESS RATING

Levels	Ability Profile		N.C.	Slight	Mod.	Signif.
I.	A	Attention			X	
II.	W	Vis. discrim. and sequencing			X	
	W	Aud. discrim. and sequencing				X
III.	W	Short-term memory			X	
	A	Long-term memory		X		
IV.	W	Vis. closure		X		
	A	Aud. closure				X
	A	Lang. closure			X	
	W	Conceptualization		X		
V.	W	Self-monitoring				X
	W	Intermodality integration			X	

Name: P.V.
Age: 33
ABE Program: Opportunity School

P. was testing in Februaruy at her ABE Center. She received 18 hours of remedial work at her center through Plan B.

P.'s primary areas of difficulty were in short-term memory and in auditory-visual integration. These deficits were largely responsible for her difficulties comprehending oral directions and associating sound-symbol correspondences for effective reading and writing skills. Additionally, her relatively weak conceptual abilities made the learning of abstract language concepts difficult.

P. responded well to educational therapy. She did a great deal of work independently to further her program. Her progress in decoding skills improved greatly in a short period of time.

P.'s ABE teacher worked closely with the LD specialist to coordinate a total educational program for P.

P.'s program was abruptly terminated when she was dropped from the job training program that funded her at Opportunity School. Students who were not able to make rapid progress academically were not allowed to continue with job training. Such was the plight of other L.D. students also. This event was very distressing to P. Attempts to secure help for P. through vocational rehabilitation were unsuccessful.

Paula Pattschull
Educational Therapist

PROGRESS AND GROWTH CHART

Student (sex) age
R.V. M 49
LD Severity: Hours of Therapy
Sev.-Mod. 28

ACADEMIC	Date	Date
Letter-word identification	5.0	5.7
Word attack	2.5	3.5
Reading comprehension	7.0	8.0
Spelling	3.2	3.4

PERSONAL DEVELOPMENT

	NC	Min.	Mod.	Maj.
Confidence in ability to learn			X	
Understanding of problems			X	
Acceptance of problem				X
Strategies for learning			X	
Self-confidence			X	
Helpful in employment		X		
Helpful in life skills		X		
Helpful in relating to people			X	

PROCESS RATING

Levels	Ability Profile		N.C.	Slight	Mod.	Signif.
I.	A	Attention		X		
II.	W	Vis. discrim. and sequencing			X	
	W	Aud. discrim. and sequencing		X		
III.	W	Short-term memory		X		
	W	Long-term memory		X		
IV.	W	Vis. closure			X	
	W	Aud. closure			X	
	S	Lang. closure		X		
	W	Conceptualization	X			
V.	W	Self-monitoring			X	
	W	Intermodality integration		X		

Name: B.V.
Age: 49
ABE Program: Commerce City

B. was tested in May and then received remedial services for approximately 2 months at the CSPS center.

B. is a pleasant, cooperative person. He is a recovered alcoholic who appears committed to improving his life situation. He puts forth good effort with academic work but often becomes frustrated with his lack of immediate progress.

It is difficult to sort out the cause of B.'s learning problems, whether they are due to alcoholism or a specific learning disability. The visual perceptual problems can be classified as learning disability as they can be traced through a definitive history. The memory problems most likely are the result of prolonged alcohol intake.

The following factors (regardless of their cause) that are present in B.'s case are correlates of certain types of specific learning disability: poor conceptualization of academic and personal circumstances, circumlocution, weak intermodality integration (visual-auditory processing), concrete learning style, verbal expression deficits and interpersonal communication problems. Furthermore, B.'s birth and early childhood history show positive indicators of specific learning disability.

B.'s remedial program concentrated on strategies and patterning of phonics and language structure. As little reliance was placed on memory as possible. Syllabication and word ending practice reinforced by behavior modification of reading habits helped B. improve his decoding skills rapidly. However, little progress was made with spelling. Role playing and counseling helped B. cope with interpersonal difficulties at work more effectively.

B. is not happy working as a custodian. He plans to study for his G.E.D. and then learn a skilled trade.

Paula Pattschull
Educational Therapist

PROGRESS AND GROWTH CHART

Student (sex) age
C.O. F 23
LD Severity: Hours of Therapy
Severe 34

ACADEMIC

	Date 11/79	Date 1/80
Letter-word Identification	1.8	2.0
Word attack	1.6	2.4
Reading comprehension	1.7	2.5
Spelling		

PERSONAL DEVELOPMENT

	NC	Min.	Mod.	Maj.
Confidence in ability to learn				X
Understanding of problems				X
Acceptance of problem				X
Strategies for learning				X
Self-confidence			X	
Helpful in employment		X		
Helpful in life skills				X
Helpful in relating to people			X	

PROCESS RATING

Levels	Ability Profile		N.C.	Slight	Mod.	Signif.
I.	A	Attention	X			
II.	W	Vis. discrim. and sequencing			X	
	W	Aud. discrim. and sequencing			X	
III.	W	Short-term memory		X		
	A	Long-term memory	X			
IV.	W	Vis. closure			X	
	W	Aud. closure			X	
	W	Lang. closure		X		
	A	Conceptualization		X		
V.	S	Self-monitoring			X	
	W	Intermodality integration				X

(1)
Name: C. O.
Age: 23
ABE Program: Jefferson County Adult Education

a). Date (Mid December, 1979) of testing/evaluation with interpretive conference on January 22, 1980.

b). Assigned to plan B and received 34 hours of individual educational therapy over a period of three months with Kathryn LeVeck at the CSPS Foundation Clinic Center.

(2) C. was diagnosed as having a specific learning disability with processing deficits in visual perception, short-term auditory memory and sensory integration. The results of her testing were complicated by medical problems with speech and hearing. C.'s primary deficit on the response model would be level II (perception and differentiation).

(3) C.'s remedial program focused on developing reading, spelling and life skills. C. completed a highly structured, linguistically based phonics program to develop all reading and written language skills. C.'s decoding skills improved significantly. Written language is still a severe deficit area. C.'s life skills program focused on writing checks, paying bills, learning how to ride the bus and pursuing a drivers license. C is now self-sufficient in the first two areas. In general C. met with much success in the program. Toward the end, family circumstances made it difficult for her to come regularly and progress dropped off.

(4) C. reported feeling much more comfortable with her learning deficits. Her self-confidence has improved significantly. She now feels much more able to find ways to compensate for her deficits and can complete tasks that previously she avoided altogether.

(5) If her family situation permits, C. plans to continue her educational program at Adult Education in Jefferson County in the fall. She is now unemployed and hopes to gain employment after completing a G.E.D. C. is successfully attempting to raise her young son and pursue a life more independent from her family.

Kathryn LeVeck
Educational Therapist

PROGRESS AND GROWTH CHART

Student (sex) age
L.W. 19
LD Severity: Hours of Therapy
Sev.-Mod. 40

ACADEMIC

	Date	Date
alternate evaluation used		
Letter-word Identification	____	____
Word attack	____	____
Reading comprehension	____	____
Spelling	____	____

PERSONAL DEVELOPMENT

	NC	Min.	Mod.	Maj.
Confidence in ability to learn				X
Understanding of problems				X
Acceptance of problem				X
Strategies for learning			X	
Self-confidence				X
Helpful in employment	not applicable			
Helpful in life skills				X
Helpful in relating to people				X

PROCESS RATING

Levels	Ability Profile		N.C.	Slight	Mod.	Signif.
I.	W	Attention			X	
II.	W	Vis. discrim. and sequencing			X	
	W	Aud. discrim. and sequencing				X
III.	W	Short-term memory			X	
	A	Long-term memory			X	
IV.	W	Vis. closure			X	
	W	Aud. closure				X
	W	Lang. closure				X
	W	Conceptualization				X
V.	W	Self-monitoring				X
	W	Intermodality integration				X

(1)
Name: L. W.
Age; 19
ABE Program: Jefferson County Adult Education

a). Testing and evaluation, using the Slingerland Screening Tests, late December 79 with interpretive conference mid March 1980.

b). Assigned to Plan B and received 45 hours of individualized educational therapy over a period of seven months with Barbara Grochowski at Jefferson County Adult Education Center. Much work had been done at the Adult Education Center, however, because L. fell within the guidelines of the project he continued remedial work through the project.

L. is very weak in all areas where auditory or visual modalities were tested separately; however, when using multiple modalities he was more successful until a kinesthic motor response was called for. L. had displayed severe difficiencies in perception both auditorally and visually. Problems with short-term memory are also evident.

L.'s program focused on sequencing of sounds and symbols, sound blending, eye-tracking and part-whole relationships using a phonetic, linguistic multi channel approach. L.'s progress has been more significant in the auditory modality than the visual, however growth was made in all areas. It is notable that L. completed requirements for a high school diploma at the Jefferson County Adult Education Center. He stated that without the remediation he would never have been able to get it. Upon completion of his work at the Adult Education Center, L. went into the army and is pursuing training in the food service field.

Barbara Grochowski
Educational Therapist

PROGRESS AND GROWTH CHART

Student (sex) age
T.M. M 19
LD Severity: Hours of Therapy
Severe 41

ACADEMIC

	Date 3/11/80	Date 6/28/80
Letter-word identification	1.7	2.0
Word attack	1.9	3.2
Reading comprehension	1.8	3.1
Spelling	2.9	3.4

PERSONAL DEVELOPMENT

	NC	Min.	Mod.	Maj.
Confidence in ability to learn			X	
Understanding of problems			X	
Acceptance of problem			X	
Strategies for learning			X	
Self-confidence			X	
Helpful in employment		N/A		
Helpful in life skills			X	
Helpful in relating to people			X	

PROCESS RATING

Levels	Ability Profile		N.C.	Slight	Mod.	Signif.
I.	A	Attention		X		
II.	W	Vis. discrim. and sequencing				X
	A	Aud. discrim. and sequencing				X
III.	W	Short-term memory			X	
	A	Long-term memory	X			
IV.	W	Vis. closure			X	
	A	Aud. closure		X		
	W	Lang. closure		X		
	S	Conceptualization	X			
V.	W	Self-monitoring			X	
	W	Intermodality integration		X		

(1)
Name: T.M.
Age: 19

ABE Program: Jefferson County Adult Education

a). Testing and evaluation mid March, 1979 with interpretive conference at Jefferson County Adult Education Center on April 17, 1979.

b). T. was assigned to plan B and received 41 hours of individualized educational therapy over a period of three months with Paula Pattschull and Barbara Grochowski at CSPS Foundation Clinic Center.

T's test results clearly show the presence of specific learning disability. T's primary deficit area is with visual perception and adversely affects his visual discrimination of printed symbols, his sequencing of letters and numbers in left-to-right patterns, his visual memory for letter and word forms and his visual-to-motor (writing, in particular) performance.

T's program centered around reading skills to include sequencing of sounds and symbols, eye tracking, and comprehension, writing skills and self-monitoring. Since T's processing is strengthened when visual information is related to auditory information, mult-channel techniques were used. T. showed significant progress in both auditory and visual discrimination, and sequencing with definite gains noted in short-term memory, self-monitoring and visual closure.

In order to continue remediation T. has applied for funding through the Department of Vocational Rehabilitation. His application is still in process and no determination has been made to date. T. hopes he will be able to continue as he feels he has made significant progress. T. will also continue his work at the Jefferson County Adult Educational Center.

Barbara Grochowski
Educational Therapist

PROGRESS AND GROWTH CHART

Student (sex) age
F.R. M 30
LD Severity: Hours of Therapy
severe 43

ACADEMIC

	Date 7/80	Date 6/30
Letter-word Identification	1.5	2.3
Word attack	1.8	2.8
Reading comprehension	2.3	2.5
Spelling	1.3	1.8

PERSONAL DEVELOPMENT

	NC	Min.	Mod.	Maj.
Confidence in ability to learn		X		
Understanding of problems				X
Acceptance of problem				X
Strategies for learning		X		
Self-confidence		X		
Helpful in employment		X		
Helpful in life skills				X
Helpful in relating to people		X		

PROCESS RATING

Levels	Ability Profile		N.C.	Slight	Mod.	Signif.
I.	W	Attention			X	
II.	W	Vis. discrim. and sequencing			X	
	W	Aud. discrim. and sequencing			X	
III.	W	Short-term memory		X		
	A	Long-term memory	X			
IV.	W	Vis. closure			X	
	W	Aud. closure			X	
	W	Lang. closure		X		
	A	Conceptualization		X		
V.	W	Self-monitoring				X
	W	Intermodality integration			X	

(1)
Name: F. R.
Age: 30
ABE Program: Jefferson County Adult Education

a). Date (Latter January) of testing/evaluation with interpretive conference on February 5, 1980.

b). Assigned to plan C and received 43 hours of individual educational therapy over a period of five months with Kathryn LeVeck at the CSPS Foundation Clinic Center.

(2) F.'s test profile indicated the presence of a specific learning disability, with deficit areas in visual perception, short-term memory and visual-auditory integration. F. also has some physically based problems with vision. F.'s primary deficit on the task response model would be level I (Awareness and Attention) and level II (Perception and Differentiation).

(3) F.'s remedial program consisted of developing sound-symbol relationships which are the foundations for reading and spelling. F. completed a highly structured, linguistically based phonics program. Sight word knowledge was also substantially increased. Improvement of short-term memory, visual discrimination, and self-monitoring skills were also goals in F.'s program. F.'s phonics knowledge has substantially improved. However, more progress is needed in the area of self-monitoring of errors and application of skills learned.

(4) F. reported feeling that his skills have improved significantly. He also reported seeing changes in his attitudes towards everyday life and work situations. Even co-workers reported seeing improvement in F.'s attitudes toward work. F. approaches the reading task with more self-confidence. He does appear to have a greater understanding of his learning disability and knowledge of ways to compensate for them.

(5) F. is successfully employed as a custodian. He hopes to continue his remedial work over at Jefferson County Adult Education in the fall. F. now feels confident enough to pursue his educational program independently.

Kathryn LeVeck

Kathryn Le Veck
Educational Therapist

PROGRESS AND GROWTH CHART

Student (sex) age
G.S. M 30
LD Severity: Hours of Therapy
Severe 62

ACADEMIC

	Date 11/6/79	Date 6/23/80
Letter-word Identification	1.2	1.8
Word attack	1.0	2.4
Reading comprehension	0	1.6
Spelling	1.1	NA

PERSONAL DEVELOPMENT

	NC	Min.	Mod.	Maj.
Confidence in ability to learn			X	
Understanding of problems				X
Acceptance of problem		X		
Strategies for learning				X
Self-confidence			X	
Helpful in employment	X			
Helpful in life skills	X			
Helpful in relating to people	X			

PROCESS RATING

Levels	Ability Profile		N.C.	Slight	Mod.	Signif.
I.	A	Attention		X		
II.	W	Vis. discrim. and sequencing				X
	W	Aud. discrim. and sequencing		X		
III.	W	Short-term memory			X	
	A	Long-term memory	X			
IV.	W	Vis. closure				X
	W	Aud. closure		X		
	W	Lang. closure		X		
	W	Conceptualization			X	
V.	W	Self-monitoring			X	
	W	Intermodality integration		X		

(1)
Name: G. S.
Age: 30
ABE Program: Jefferson County Adult Education

a). Testing and evaluation early November, 1979 with interpretive conference at Jefferson County Adult Education Center on November 20, 1979.

b). G. was assigned to plan B and received 62 hours of individualized educational therapy over a period of four months with Paula Pattschull and Barbara Grochowski at CSPS Foundation Clinic Center.

G's test results show that his perceptual and short-term memory skills are extremely low. He does possess some higher level reasoning and logical thinking skills. G's achievement-aptitude discrepancy in the reading area is very great. In sum, G. has an extremely severe learning disability. Specifically, G's diagnosis is both auditory and visual dyslexia.

G's program focused on specific auditory and visual training in learning sound-symbol correspondences. The approach used with G. was phonetic and linguistic, as opposed to sight words which have not been successful for G. in the past.

Progress to date shows the most significant gains in the visual modality; discrimination, sequencing and closure.

G. stated that he feels he's in the process of learning to read which will affect all areas of his life once this goal is reached. "Compared to what I knew before there has been a 100% change".

G. has chosen to continue academic remediation at the CSPS Foundation clinic on a weekly basis, However, he plans to drop out of the A.E. program until his skill levels are higher and he can work somewhat more independently.

Barbara Grochowski
Educational Therapist

PROGRESS AND GROWTH CHART

Student (sex) age
LV M 52
LD Severity: Hours of Therapy
severe 62

ACADEMIC

	Date 5	Date 6/30
Letter-word identification	1.8	2.3
Word attack	2.5	4.0
Reading comprehension	2.5	3.0
Spelling	2.0	3.0

PERSONAL DEVELOPMENT

	NC	Min.	Mod.	Maj.
Confidence in ability to learn				X
Understanding of problems				X
Acceptance of problem			X	
Strategies for learning				X
Self-confidence			X	
Helpful in employment				X
Helpful in life skills				X
Helpful in relating to people	X			

PROCESS RATING

Levels	Ability Profile		N.C.	Slight	Mod.	Signif.
I.	A	Attention	X			
II.	W	Vis. discrim. and sequencing			X	
	W	Aud. discrim. and sequencing			X	
III.	W	Short-term memory			X	
	A	Long-term memory		X		
IV.	W	Vis. closure				X
	W	Aud. closure				X
	W	Lang. closure				X
	A	Conceptualization		X		
V.	S	Self-monitoring				X
	W	Intermodality integration			X	

(1)
Name: L.V.
Age: 52
ABE Program: Jefferson County Adult Education

a). Date (latter November) of testing/evaluation with interpretive conference on December 18, 1979.

b). Assigned to plan C and received 62 hours of individual educational therapy over a period of five months with Kathryn LeVeck at the CSPS Foundation Clinic Center.

(2) L's test profile indicated a specific learning disability which has made learning very difficult for him. Visual perception, auditory discrimination and memory - mainly long term retrieval — were L's specific difficulties. L's primary deficit level is Level II (perception and differentiation).

(3) L's remedial program concentrated on ways to strengthen visual, auditory and memory deficits by learning language patterns and sound-symbol correspondences which are the foundations for reading and spelling. L's basic decoding and encoding skills are now at a functional level. His sight word knowledge also increased substantially, Although memory deficits create greater problems when decoding skills are not applicable. L. also made gains using math skills and life skills.

(4) L. has gained a greater understanding of his learning disability and how it has affected all facets of his life. He reported that he approaches tasks at work with greater confidence. Co-workers also noticed specific changes in L's oral speech. L. also reported enthusiastically how much enjoyment he has gained by being able to read.

(5) L. is sucessfully employed by C. Company and has maintained steady employment for all of his adult life. L. hopes to continue a G.E.D. program at Adult Education in the fall now that his reading skills are on a functional level.

Kathryn LeVeck
Educational Therapist

Mini Report

Name: G. A.
Age: 18
ABE Program: Jefferson County Adult Education Center

a). Date(Latter November 1979) of testing/evaluation with interpretive conference on December 13, 1979.

b). Assigned to plan C and received 12 hours of individual educational therapy over a period of 2 months with Kathryn LeVeck at the CSPS Foundation Clinic Center.

G. is a young single parent who tried to continue her education at Adult Education in Jefferson County. She was referred to this special project for evaluation for learning disability. G. was diagnosed as learning disabled and began a remedial program at the CSPS Foundation Clinic. However, due to employment and family problems, G. chose to discontinue her program at the end of two months. Her attendance was inconsistant and progress was minimal. This pattern is characteristic of the young adult with many environmental difficulties.

Kathryn LeVeck
Educational Therapist

Mini-Report

(1)
Name: K.V.
Age: 18
ABE Program: Jefferson County Adult Education

a). Date(February 6 and 21, 1980) of testing/evaluation with interpretive conference on April 8, 1980.

b). Assigned to plan B and received 0 hours of individual educational therapy at the CSPS Foundation Clinic Center.

K.V. is a young adult who was living in a group home called Sovereign House in Golden at the time of referral. He was referred for evaluation of learning disability by Adult Education in Jefferson County. During the evaluation K. became embroiled in legal difficulties. Although he was able to complete the evaluation and testing, he was unable to pursue any type of educational therapy at the foundation clinic or to continue his education at ABE in Jefferson County.

K's major deficit was in cognitive processing and abstract thinking. These learning deficits appeared to affect his total life situation and affect his decision making process. Individuals with learning disability are those whose intelligence falls within a normal range, but who have extreme difficulty with the processing of information on a neurophysiological basis. These processing deficits often create many problems within educational settings and some degree of difficulty within the general environment.

Kathryn LeVeck
Educational Therapist

Mini Report

Name: M.S.
Age: 18
Sex: M
ABE Program: Jefferson County

M. was tested in the fall of 1979 and assigned to Plan B. He received 10 hours of educational therapy before dropping out of the program due to serious personal problems.

M. was a bright young man who had previously been diagnosed as LD in the public schools. He had received special help both in school and through a private agency in the Denver area.

Despite inconsistent attendance and a host of major life problems, M. made very rapid gains in this program. Noteworthy gains were made in each of his 6 sessions.

It is felt that this young man will be able to return to an educational program when his life is better organized and be successful in his achievement. He became adept at developing more effective cognitive strategies in a short period of time. It is predicted that he will continue using these strategies in his life and in later educational endeavors.

Paula Pattschull
Educational Therapist

Mini Report

Name: P.D.
Age: 42
ABE Program: Opportunity School

P. is a friendly, hard-working woman who was enrolled in the A.B.E. program at Opportunity School from July 1979 - January 1980. In January of 1980, P. started an electrical assembly training program through D.E.T.A. P. reports that the reading in the text was too difficult for her, and she fell behind the rest of her class in her assignments.

P.'s teacher referred her to the project for individualized remedial help in reading and spelling. Her problems lie both with auditory and with visual discremination; and, auditory to visual-motor integration and sequencing (as in spelling). P.'s test scores yielded a 2.0 grade equivalent in reading (Gray Oral).

P. appears to have a hard-working, persistent attitude. While her approach to tasks is somewhat impulsive, she is quite well organized. She has difficulty monitoring her own errors, particularly in tasks requiring the sequencing of either visual or auditory symbols (e.g., spelling).

P. was unable to continue her educational program because she was dropped from the employment training program that funded her due to her low academic skills (caused by her LD).

Paula Pattschull
Educational Therapist

APPENDIX E.

Materials and Publishers

Major Materials:

Auditory Discrimination in Depth.	(C.H. and P.C. Lindamood) Teaching Resources: 100 Boylston St. Boston, MA 02116
Glass Analysis	(Glass). Instructional Material Co. Walker Educational Book Corp. 720 5th.Ave., New York, NY 10019
Logical Encoding and Decoding	(H. Grush and P. Fennel). Alphapress: LEAD Educational Resources 32 Colony Rd., Lexington, MA 02173
Monterey Reading Program	Monterey Learning Systems 900 Welch Rd., Palo Alto, CA 94304

Supplementary Materials:

Ann Arbor Tracking, Thought Tracking, Cues and Comprehension	Ann Arbor Press P.O. Box 388, Worthington, OH 43085
Comprehension & Vocabulary Development Task Cards	Instructional Fair: 4158 Lake Michigan Dr., Grand Rapids, MI 49504
Controlled Reading Study Guides, Filmstrips, and Tapes	Educational Development Laboratories McGraw Hill: 330 W.42nd. St. New York, NY 10036
Learning Predictable Language	(C. Ericson). Academic Therapy Publications: 1539 4th.St. San Rafael, CA 94901
Pal Paperbacks	Xerox Education Publications: 245 Long Hill Rd., Middletown, CN 06457
Reading All Around You	Xerox Education Publications: 245 Long Hill Rd., Middletown, CN 06457

Reading Comprehension	(Jane Ervin).Educators Publishing Service: 75 Moulton St. Cambridge, MA 02138
See, Say, and Write	(N. Lewis). Amsco: 315 Hudson New York, NY 10013
Specific Skill Series	(R. Bonning). Barnell-Loft: 111 S. Centre Ave., Rockville Centre, NY 11571
Spellex Word Finder	Curriculum Associates: 5 Esquire Road, North Billerica, MA 01862
The Spell of Words	(E. Rak). Educators Publishing Service: 75 Moulton St. Cambridge, MA 02138
Solving Language Difficulties	(A. Steere, C. Peck & L. Kahn). Educators Publishing Service
The Structure of Words	(J. Rule). Educators Publishing Service
Trouble Shooters	Houghton Mifflin: 110 Tremont, Boston, MA. 02107

Information regarding subscriptions and single issue purchase of LD journals and newsletters may be obtained as follows:

JOURNALS

Academic Therapy: 20 Commercial Blvd.,Novato,CA. 94947

Exceptional Education Quarterly: Aspen Systems Corp., 20010 Century
Blvd., Germantown, MD. 20767

Journal of Learning Disabilities: 101 E. Ontario St., Chicago, IL. 60611

Learning Disabilities Quarterly: Dr. Donald Deshler, Dept. of Sp.Ed.
435 Miller Bldg.,University of Kansas
Medical Center., 39th & Rainbow Blvd.
Kansas City, KA. 66103

Topics in Language Disorders: Aspen Systems Corp., 1600 Research Blvd.
Rockville, MD. 20850

NEWSLETTERS

"Adult Learning Problem Notes": Phillip Prey, OAS Dept., Marshall
University, Huntington WV. 25701

"Newsbriefs" (ACLD Publication): 4165 Library Road, Pittsburg, PA. 15234

APPENDIX G.

kulick foundation for the
adult learning disabled, ald

directress
holly beth kulick

MEMO:

This foundations main purpose is to assist the adult learning disabled, (ald), in all areas of mental and physical betterment.

Our public Information/Referral and Out-Reach Service will tentatively be opening in January 1980. In this information service will be a listing of all services in this foundation and the regional area through other organizations.

We will have in this foundation A TEAM APPROACH for the screening, testing, evaluation and remediation, (ster) for the individualized client program.

We will have a film presentation through the department of visual graphx. This department will demonstrate how the (ald) reads compared to a normal skilled reader; tentative date for presentation unknown.

We are working on research projects in the areas of medicine, nutrition, juvenile delinquency, child abuse, educational books, etc.

thank you,

HB

holly beth kulick

p. o. box 21564 denver, co 80221 303-426-0370

A TEAM APPROACH TO ADULT LEARNING DISABILITIES

designed by holly beth kulick
directress for UB
kulick foundation, ald

PHASE I

Educational Research/Testing & Remediation
(Diagnostic Psycho-educational Testing)

Eye Movement Recordings

Physician Screening/Testing

Nutritional Screening/Testing

Social Psychology/Behavioral Research
(Coping Skills)

PHASE II

Staffing/Evaluation

Compiling Results

Interpretation

Analysis of Components

Recommendations

Final Report

PHASE III

Adult Learning Disabled Client Remediation; Individualized (ster)* Program and then Job/Career Counselling

(ster) screening, testing, evaluation and remediation

GLOSSARY

Glossary

Accent: Stress or pitch changes on syllables or words for emphasis in spoken language.

Acuity: Sharpness, clarity, as in "visual acuity," "auditory acuity."

Agraphia: Inability to write words.

Alexia: The loss of ability to read because of brain damage, or the complete failure to acquire reading skills.

Anomia: Difficulty in recalling or remembering words or the names of objects.

Aphasia: Loss of ability to understand and use speech or language, usually associated with neurological injury.

Apraxia: (dyspraxia) Difficulty in motor output; may affect speech formulation.

Attention: The process of conscious awareness focused information to be dealt with; the process of maintaining or shifting awareness to meet task demands.

Auditory blending: Fusion of heard parts of words into whole words.

Auditory perception: The ability to discriminate, recognize and organize sensory stimuli received through the ear.

Bilateral: Working together of both sides of the body.

Binocular coordination: Ability of the eyes to move together.

Binocular vision: Focusing, or blending into one, of the images seen separately by the two eyes.

Blend: Consonant cluster of two or more sounds of letters.

Body image: Mental representation one has of one's own body, derived from internal sensation, postural changes, contacts, etc.

Body image: Mental representation one has of one's own body, derived from internal sensation, postural changes, contacts, etc.

Body schema: Overall pattern of one's direct or sensory awareness of one's own body; the characteristic way in which a person is aware of his own body.

Central nervous system: Brain and spinal column.

Circumlocution: using many words to reach a point; denotes inefficiency in verbal expression.

Closure: The ability to recognize a whole when one or more parts are missing.

Cloze procedure: A technique used in testing and teaching reading; involves deletion of words.

Cognition: The actire process of organizing thought; "knowing."

Cognitive strategies: A conscious organization of thinking to reach a goal, perform a task.

Communication: Processing and acting upon information from external sources.

Compensation: Avoiding or by passing problems areas by substitution.

Conceptual disorders: A disturbance in the thinking process and in cognitive activities, or a disturbance in the ability to formulate concepts.

Congenital: existing at birth

Coordination: Harmonious action of muscle groups in performing complex movements.

Decoding: Recoding of visual-graphic symbols into phonological (sound) units; reading.

Deficit: Weakness in any aspect of information-processing; or, in a particular academic skill.

Development: Interaction between maturational processes and environmental influences.

Directionality: projection of laterality outside the individual, which has developed inside the individual.

Dyscalculia: Inability to do simple arithmetic calculations.

Dysfunction: Impairment in aspect of performance.

Dysgraphia: A form of dyspraxia whereby mental word images and motor system for writing are poorly coordinated.

Dyslexia: Partial inability to decode written language symbols as is necessary to the reading process.

Dysnomia: An expressive lang. disorder resulting in difficulty retrieving specific words from memory under ordinary circumstances.

Dysphasia: Partial inability to understand and use language; considered in two categories, sensory (receptive or input) dyphasia; expressive (dyspraxic or output) dysphasia.

Encoding: Recoding of phonological units into visual-graphic symbols; spelling, writing.

Etiology: Source of dysfunctional condition.

Expression: The process by which integrated meanings are sent to others and received from others in a personalized manner.

Eye-hand coordination: Integration of the visual and tactual systems leading to the point at which the hand becomes the tool to serve the visual mechanism.

Feedback: Inner sensation of one's external action; or, information on performane.

Formulation or syntactical dysphasia: Poor ability to sequence words into correct syntactical, grammatical sentences.

Grapheme: A written language symbol that represents phoneme.

Hyperkinesis: Constant and excessive movement and motor activity; hyperactivity.

Impulsivity: The behavioral characteristic of acing upon impulse without planning.

Information: A perceived selection of stimuli.

Inner language: The process of internalizing and organizing expeiences without the use of linguistic symbols.

Integration: The process through which the rudimenary mechanics of a task are patterned as habits, no longer requiring conscious, mediated effort; the process allowing for monitoring of ones own responses.

Intersensory: Referring to two or more sensory modalities.

Intrasensory: Referring to one sensory modality.

Kinetheses: Sensory knowledge of ones body movements.

Kinesthetic: Motoric action, muscle sense.

Language disorder: A deficit in linguistic competence (as implied from observed linguistic performance) relative to existing levels of social and functional intelligence.

Laterality: Involves the awareness of the two sides of one's body and the ability to identify them as left or right correctly.

Linguistics: The formal study of the nature and structure ofhuman language.

Linguistic competence: Underlying knowledge base of language upon which language behavior is generated.

Linguistic performance: One's overt, measureable language behavior.

Maturational lag: A slowness in certain aspects of development.

Memory: The process by which information is briefly held and organized (short-term memory), stored and then retrieved for recall (long-term memory)

Modality: Sensory channel.

Monitoring: Awareness of performance through feedback.

Morpheme: Base unit of meaningful combinations of sounds (phonemes).

Morphology: The basic conventional structure of a given language expressed by word formation and derivation and grammatical inflection.

Multisensory: Teaching approach using more than one modality simultaneously.

Ocular-motor: Eye movements.

Perception: The process through which sensory charactoristics of objects and symbols are initially analyzed discriminated, recognized, compared and patterned.

Perceptual-motor: Functioning of either perceptual processes, motor processes, or both.

Phoneme: One of approximately 40 speech sounds (each with many subtle variations).

Phonetics: Universal physical description of spoken utterances.

Phonics: Applying phonetics to the teaching of reading.

Phonology: Sound symbols and particular combinations occurring in a given language.

Proprioceptive: Sensory modality of involving movement; body structure position.

Psycholinguistics: The field of study combining two disciplines - psychology and linguistics - to examine the language process.

Recoding: Any change of forms information imposed by the learner.

Remediation: The long-term process of developing more effectine ways of dealing with information so that successful learning can occur.

Selective attention: An active process of responding and critically selecting appropriate stimuli for a task.

Self-monitoring: Awareness of performance through internal cognitive feed back.

Semantics: Underlying meanings of words and their development.

Sensory-motor: A term applied to the combination of the input of sensations and the output of motor activity.

Sensory modality: Part of the central nervous system receiving information - vision, audition, taction, kinesthesis.

Social perception: The ability to interpret stimuli in the social environment and appropriately relate such interpretations to the situation.

Soft neurological signs: Neurological abnormalities that are very slight and difficult to detect.

Stimulus: A unit of sensory data.

Syndrome: Set of symptoms that generally occur together.

Syntax: The basic conventional structure of a given language expressed in the arrangement of words (in oral or written sentences) to designate the relationships between the words.

Tactile: Referring to sense of touch.

Task analysis: Examining a particular task to identify its elements and the skills required to do it.

Word analysis: Analysis of an unfamiliar word into known elements for the prpose of identification.

Word attack skills: Ability to analyze words by syllable and phonic elements, in orde to arrive at pronunciation and meaning.